COMMONWEALTH of VIRGINIA

Virginia Nonpoint Source Pollution Management Program

2004 Annual Report

March 31, 2005

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Virginia Department of Conservation & Recreation
State Parks • Soil & Water Conservation • Natural Heritage
Chesapeake Bay Local Assistance • Land Conservation
Outdoor Recreation Planning • Dam Safety & Floodplains

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Executive Summary

Virginia's Nonpoint Source Pollution Management Program, led by the Department of Conservation and Recreation (DCR), is a diverse network of state and local government programs that collectively help prevent degradation of water quality and restore the health of our rivers, lakes, and bays. The Program utilizes partnerships to advance long and short-term goals for the reduction of nonpoint source pollution; through: financial, technical, and outreach assistance, and local capacity building to achieve specific nonpoint source pollution control targets.

This annual report is written in response to Section 319 (h)(8) and (11) of the Clean Water Act (33 USC 1329). The *2004 Virginia Nonpoint Source Pollution Management Annual Report* summarizes pollution prevention and control efforts throughout the state as funded by Section 319 of the Clean Water Act and describes the activities and accomplishments of the Commonwealth of Virginia regarding administration of Virginia's nonpoint source pollution management programs in 2004. The activities identified in this report build on previous accomplishments and set the stage for continuing Virginia's ambitious environmental agenda.

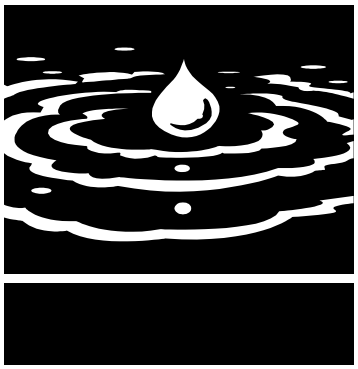
The efforts to address nonpoint source pollution highlighted in this report reflect the commonwealth's commitment to protecting and restoring our natural resources. This annual report describes anticipated pollution reductions that will be achieved through agricultural cost-share assistance and water quality improvement projects. In addition, the report describes pollution prevention accomplishments related to implementation of the Nonpoint Source Pollution Management Program.

Meeting water quality standards for streams listed on Virginia's 303 (d) List of Impaired Waters due to nonpoint sources of pollution is a primary focus of Virginia's program. Total Maximum Daily Load implementation plans have been developed for impaired waters in order to maximize water quality benefits, and approximately $1.5 million of Environmental Protection Agency (EPA) Section 319(h) funds have been targeted, annually, towards implementation of these plans.

Reduction of various pathogens, nutrients and sediments represents a major water quality accomplishment that has been achieved through on-the-ground implementation of agricultural, urban and residential Best Management Practices (BMPs). Other accomplishments highlighted in this report help Virginia meet its responsibilities to protect and restore water quality.

However, without sufficient funding and the flexibility to address priority water quality issues, it will be difficult to meet the challenge of protecting water quality in Virginia. Reductions in EPA 319(h) funds and other resource limitations constitute a significant impediment to implementation. The loss of flexibility in the use of Section 319(h) funds constitutes another potential obstacle to successful implementation. Increasingly, the use of these funds is being pre-determined by federal guidance. State discretion to target all available funding, based on identified priorities and the management program, is essential if we are to meet the long-term water quality challenges facing the Commonwealth of Virginia.

The NPS program will continue to lead efforts to create comprehensive watershed plans across the state to help address the impacts of nonpoint source runoff, and to facilitate and/or track implementation of nonpoint source watershed planning and project efforts. These efforts will be accomplished by continuing to leverage and work with other governmental and nongovernmental partnerships, and supporting new nonpoint source control initiatives and partnerships as they arise.



Nonpoint Source Pollution Program Mission and Goals

Virginia's Nonpoint Source Pollution (NPS) Management Program is a diverse network of state and local government programs. Collectively, these programs help prevent degradation of water quality and restore the health of our lakes, rivers and bays by promoting and funding state and local watershed planning efforts, water quality monitoring, education and outreach, stream and wetland restoration, and other measures to reduce, prevent and track nonpoint source pollution loads.

The NPS program is key in promoting partnerships and inter/intra -governmental coordination to reduce nonpoint sources, and helping bring both the necessary technical and financial resources to local watershed management planning, continued implementation of best management practices and restoration.

The attainment of beneficial uses as measured by water quality standards compliance is the overriding purpose of control programs identified in the NPS management program.

In 1999, a number of long-term and short-term priorities were identified in a management effort to meet statewide nonpoint source pollution control goals. This plan identifies milestones for a five-year time frame through which progress towards the achievement of stated goals can be reported and monitored.

Virginia's Mission Statement:

To control nonpoint source pollution, to restore and protect living resources and maintain other beneficial uses of Virginia's waters, and to help assure the protection of Virginia's outstanding quality of life

The resulting NPS Management Plan described 19 long-term goals with 80 associated objectives aimed to reduce pollution from the nine NPS source pollution categories:

1. Watershed Prioritization,
2. Agriculture,
3. Forestry,
4. Urban-Construction and Development,
5. Monitoring and Tracking,
6. Resource Extraction,
7. Hydromodification,
8. Grants and Technical Assistance Coordination, and
9. Coastal Nonpoint Source Pollution Control.

Yearly work plans and agendas for the NPS program are geared around the implementation of the 1999 NPS Management Plan to achieve 5-year program goals by 2004 and Long-term program goals by 2014.

In 2004, the Commonwealth continued implement its Nonpoint Source Management Plan by concentrating NPS efforts on the following priority areas:

- Collaborative development and implementation of TMDLs
- Coordination and expansion of the CREP and Agriculture-Cost-Share Programs
- Inventory and abatement of NPS pollution from abandoned mineral mine sites
- Expansion and delivery of Nutrient Management training and certification and nutrient management planning
- Development and expansion of the Stormwater Management and the Erosion and Sediment Control Programs
- Continued assistance for local watershed planning
- Attainment of new Riparian Forest Buffer Initiative, under Chesapeake Bay Program
- Protection of groundwater sources
- Continued implementation of the Agricultural Stewardship Act
- Continued development and implementation of Coastal Nonpoint Source Pollution Program
- Continued development and implementation of Chesapeake Bay Program.

DCR plans to update this NPS Management Program in the future to reflect the accomplishments and achievements and program changes that have occurred over the past five years.

Nonpoint Source Pollution Program Overview

INTRODUCTION

Nonpoint source (NPS) pollution creates significant water quality problems in Virginia. NPS pollution results mainly from stormwater runoff from land surfaces that have been affected by man's activities on areas such as farmland, city streets, construction sites, suburban lawns, abandoned mine land and areas affected by forestry harvesting practices. The pollution is termed NPS because it doesn't discharge via a single point, such as a pipe, like point source pollution.

In Virginia, nonpoint sources of pollution are the dominant source of water quality problems compared to point sources.

The Clean Water Act of 1987, Section 319, required states to assess their state waters and identify those adversely affected by nonpoint sources of pollution. The Department of Conservation and Recreation (DCR) completed Virginia's first NPS assessment in 1988, with subsequent updates and refinements in 1993, 1997, 2002 and 2004.

The assessment ranks the state's 494 watersheds, for potential nonpoint source pollution, based on land use, livestock population, forest harvesting, erosion rates, disturbed acreage, and best management practice (BMPs) implementation. The rankings are used to help direct implementation of Virginia's nonpoint source pollution control programs, as well as cost-share and Section 319 funding, to watersheds with the greatest pollution potential.

Every two years the Department of Environmental Quality (DEQ) publishes a listing of all waters in the state were applicable standards are not being met. In 2004 DEQ published a combined NPS assessment and stream list. The resulting ***2004 305(b)/ 303(d) Water Quality Assessment Integrated Report*** (TMDL list) from the DEQ indicated that 6,894 miles (of 50,537 miles) of freshwater rivers and streams, 89,896 of the 120,751 acres of lakes had impaired waters and 1,810 of 1,557 square miles of estuarine area had impaired water quality. Overall, 442 of the 494 watersheds in Virginia had impaired waters in them. The majority of these listings were due to nonpoint source pollution.

Water quality issues continue to plague the Commonwealth of Virginia, related mainly to increases in nonpoint source pollution. This situation highlights the importance of a well-coordinated, fully implemented Nonpoint Source Pollution Management Program to the continued health and protection of Virginia's natural resources.

BACKGROUND

Section 319 of the 1987 Federal Clean Water Act requires that states develop and implement nonpoint source pollution management programs. The Virginia Nonpoint Source Management Program is coordinated by DCR as set forth in Section 10.1-10.4.1 of the Code of Virginia. This role includes the oversight of program development and implementation and interfacing with the Environmental Protection Agency to ensure that Virginia's program is in conformance with the requirements of the Clean Water Act of 1987. DCR is also responsible for the management and distribution of federal and state funds for program implementation.

In implementing the nonpoint source pollution program, DCR receives input from the Nonpoint Source Advisory Committee (NPSAC), an interagency committee comprised of representatives of federal and state agencies. NPSAC's mission is to serve as an interagency forum to facilitate effective implementation of nonpoint source programs in Virginia, and to achieve and maintain beneficial uses of water throughout the commonwealth.

NPSAC includes representatives of the following agencies: Department of Agriculture and Consumer Services, Department of Conservation and Recreation, Department of Environmental Quality, Department of Forestry, Department of Health, Department of Mines Minerals and Energy, Department of Transportation, Department of Game and Inland Fisheries, Virginia Cooperative Extension, Virginia Marine Resources Council, US Farm Services Agency, U.S. Forest Service, U.S. Department of Agriculture - Natural Resources Conservation Service, U.S. Fish and Wildlife Service, and U.S. Geologic Service.

Working through the NPSAC, Virginia developed its initial Nonpoint Source Pollution Management Program in 1988 with the purpose of building upon existing NPS control efforts and establishing a comprehensive approach. The attainment of beneficial uses as measured by water quality standards compliance is the overriding purpose of control programs identified in the

management program. Virginia's Nonpoint Source Program has been evolving ever since its original inception in 1988. The most recent update of the program was updated and approved by U.S. EPA in 1999. The management plan, ***Virginia Nonpoint Source Pollution Management Program - December 1999****, is still in effect today*.

DCR has overall statewide responsibility for implementing the management program and coordinating Section 319 NPS programs with the cooperation of the individual agencies and organizations for implementing specific nonpoint source control activities outlined in the management plan. These other state, federal and local agencies play a significant role in implementing individual portions of this management program.

The NPS Program serves as both and implementer as well as a facilitator for activities in the state, when ultimately a majority of projects are funded by other state, local or federal agencies.

Thus, the assessment, monitoring, and planning provided by Section 319 funds allows Virginia to integrate and coordinate multiple nonpoint source control efforts with multiple partners.

WATER QUALITY IMPROVEMENT ACT

In addition to federally mandated and funded NPS programs through Section 319, in 1997, the Commonwealth of Virginia made an unprecedented commitment to water quality and nonpoint source pollution prevention through passage of the Water Quality Improvement Act (WQIA).

This act created the Water Quality Improvement Fund (WQIF) which dedicated state monies to both point and nonpoint source water quality needs. In enacting the WQIA, the General Assembly (GA) pronounced that the restoration, protection, and improvement of the quality of state waters is a shared responsibility among state and local governments and individuals, and to that end, established the authority for cooperative programs related to nutrient reduction and other types of nonpoint source pollution.

The purpose of the programs is to maintain and/or restore water quality standards in stream segments where NPS pollution is a significant loading factor. The outcome of cooperative NPS pollution programs has been a combination of existing efforts and new opportunities that address specific water quality impairments and improvements, supported by the public and numerous stakeholders.

A primary objective of WQIF is to fund grants that will reduce the flow of excess nitrogen and phosphorus into the Chesapeake Bay through the implementation of the tributary strategies. The Virginia DEQ is responsible for administering point source grants, and the Virginia DCR administers nonpoint source grants.

WQIF funds are provided, in accordance with the guidelines, to help stimulate nonpoint source pollution reduction through the Virginia Agricultural BMP Cost-share Program and water quality improvement projects within the regions listed above. As well as financial assistance, DCR staff provides technical assistance.

No funding was provided for the WQIF for fiscal years 2002, 2003, and 2004. Fiscal year 2005 (July 1, 2004-June 30, 2005) saw a much-needed infusion of a total allocation of $9,417,500 dedicated to NPS activities. In addition, the Virginia Marine Resource Commission dredging fund and the income tax check-off for Chesapeake Bay restoration were earmarked for NPS pollution control, brining the total NPS funding to $10,510,687 for FY2005. Implementation of FY2005 funds will be directed through agricultural BMPs, CREP, competitive grants, and a partnership with the Department of Forestry. Additionally the 2005 General Assembly allocated additional WQIF money for FY2006 NPS activities, estimated at approximately $26 million.

SUMMARY

Like many other years, 2004 was extremely rewarding and productive. The water quality accomplishments identified in this report help to ensure that Virginia meets its responsibilities to protect and restore water quality throughout the commonwealth. As described in this report, Virginia is clearly making significant progress toward implementing the Virginia Nonpoint Source Pollution Management Program (1999).

This report is not intended to be a complete summary of activities during the year**,** but rather, to highlight significant accomplishments and to provide information relative to nonpoint source program efforts. Further information on the overall program can be obtained by contacting Rick Hill, NPS Planning and Grants Program Manager at DCR, (804) 786-7119. Your comments, questions, and feedback are welcomed and encouraged.

Highlights and Accomplishments

The Virginia Department of Conservation and Recreation has experienced many successes in managing nonpoint source pollution over the past year.

Some of the accomplishments are highlighted in the following sections:

- Watershed Prioritization
- Agriculture
- Forestry
- Urban Programs
- Monitoring and Tracking
- Resource Extraction
- Hydromodification
- Grants and Technical Assistance
- Coastal and Chesapeake Bay Programs
- Statewide Initiatives

WATERSHED PRIORITIZATION

There is a growing recognition among state agencies, local governments and community organizations, of the importance of watershed management in helping the commonwealth of Virginia protect and restore water quality in the Chesapeake Bay and in our rivers, streams, and lakes. Watershed offices were established to improve local delivery of nonpoint source pollution control programs and to foster and coordinate watershed management. Watershed management offices provide the framework needed to meet the Commonwealth of Virginia's long-term watershed prioritization and management goal.

This section of the annual report highlights watershed management activities within major river basins of the Commonwealth as well as the associated TMDL activities. These activities work towards implementing the Watershed Prioritization goals established in the 1999 the *Nonpoint Source Pollution Management Program.* These goals specified having a well integrated and coordinated basin planning and management program and developing TMDL plans and implementation strategies.

Specifically this section of the report will include activity reports on:

- Watershed Basin Planning
- Statewide TMDL development and implementation

Watershed Basin Planning

Chesapeake Bay Watershed

Shenandoah River Watershed

2004 was a very successful year for the Shenandoah watershed in terms of dealing with nonpoint source water issues. The established organizations, committees and working groups dealing with water quality and quantity issues continued to function and grow. The Shenandoah Pure Water 2000 was very active throughout 2004. Major actions included: participating in the removal of the McGaheysville dam on the Shenandoah River, working on development of GIS of sinkholes on I-81 transport corridor to prevent toxic spills and hazardous materials from polluting source water for Shenandoah County water supplies, leadership of the Shenandoah Sojourn II, and work on Wastewater Treatment Plant Network. Not only did the Pure Water Forum work with the traditional nonpoint source groups, but they also put on a workshop with wastewater treatment plants.

Other Shenandoah Watershed activities in 2004 included having The Regional Watershed Resources Policy Committee continue to function and add new counties to their list of active participants. In addition the Page County Water Advisory Committee grew and moved further along toward the likelihood of developing county ordinances and zoning that will protect water. Nutrient Management continued to increase. Some of the notable accomplishments beyond the traditional work in nutrient management included Litter Transfer – 4,200 tons of litter was transferred from source to other users under the state program. A similar federal program transferred another 2,000 tons of litter. Finally, Tributaries Strategies meetings were held with much public interaction from a broad and diverse group of stakeholders attending and providing input.

The hopes and expectations for the year 2005 are great. During 2005 it is expected that nutrient management plans will be written for a large number of acres involving urban areas. State owned or controlled lands will also be included in nutrient management. This will be in addition to the traditional agricultural work with nutrient management plans. In agriculture, the movement to phosphorous-based plans will continue. Attention will be paid to increase working relationships with more active and a growing number of groups that deal with water quality,

water protection, and water supply and watershed management planning issues are anticipated. It is anticipated that the office will strengthen relations with James Madison University in ways that support water quality, and watershed planning; and increase enforcement and compliance of local programs involved in erosion and sediment control by increasing our staffing levels in this office. All of this will support the Tributaries Strategies.

Potomac River Watershed

This past year the Potomac River Roundtable has been very involved in the development of the Potomac River Tributary Strategy. They hosted a Tributary Strategy "kick-off" event attended by over 100 diverse stakeholders, promoted public participation in the draft comment period, and have included the Strategies as an agenda item at each quarterly meeting. The Roundtable has been especially involved in outreach activities in support of the Strategies, hosting a LID Tour last fall and planning for a basin-wide forum this summer.

Rappahannock River Watershed

Members of the Rappahannock River Basin Commission have been discussing the Rappahannock Tributary Strategy and the implications and opportunities for local governments, including proposed funding sources. The Commission, which is composed of both local and state officials, has been an active participant by providing significant feedback during Strategy development, and is now actively searching for ways to help in implementation.

The Rappahannock Conservation Council has also provided direct input and it is eager to assist in Tributary Strategy promotion and implementation. The Council has already developed promotional brochures and is developing strong regional ties among SWCDs and localities by using small grant funds to encouraging the development and implementation of various projects, such as rain gardens, educational field days, and CREP promotional activities.

York River Watershed

The newly re-established York River and Small Coastal Basin Roundtable is a forum for regional information exchanges to address water quality issues with the York River, Mobjack Bay and the Piankatank River Watersheds. The mission of the group includes establishing position statements for practices and policies that affect water quality in these watersheds, to influence state agencies and decision makers.

The priority practices and policies they identified include: agricultural best management practices, nutrient tracking programs, funding opportunities, and nutrient point source and nonpoint source regulations.

Upper James River Watershed

2004 was a successful year for the Upper James watershed in terms of dealing with nonpoint source water issues. The Upper James River Roundtable reorganized and was looking for ways to strengthen its program.

The Upper James River Roundtable is providing the lead support for forming an Upper James River basin Resource Conservation and Development (RC&D) Council that would cover Highland, Bath, Alleghany, Craig, Botetourt and Rockbridge Counties. RC&Ds provide a formal mechanism for citizens and government agencies to cooperatively address a wide range of issues including: environmental education; land conservation; water quality; and outdoor recreation. Representatives from federal (US Forest Service, NRCS), state (DCR, DGIF), and local (Covington, Buena Vista, Rockbridge, Central Shenandoah PDC) agencies, Soil and Water Conservation Districts (Natural Bridge, Mountain Castles), and Dabney S. Lancaster Community College participate in this work.

Key elements supporting the drive to implement an RC&D include the greater degree of sustainability with annual federal funding, the fiscal advantages of 501(c)(3) (i.e., non-profit) status, particularly with respect to obtaining and disbursing grants, and the ability of a RC&D Council to continue and expand upon the work of the Upper James Roundtable. Monthly meetings are planned through the end of 2005. A formal application package will be submitted to USDA before October.

Other Upper James River Watershed activities in 2004 included the administration of numerous grants to deal with nonpoint source water quality issues. One excellent example was the grant to the Virginia Land Trust – for the purchase of riparian easements. Tributaries Strategies meetings were held with much public interaction from a broad and diverse group of stakeholders attending and providing input

Hopes and expectations for 2005 are high. During 2005, it is expected that nutrient management plans will be written for a large number of acres involving urban areas. In addition, state lands will also be included in nutrient management. This will be in addition to the traditional agricultural work with nutrient management plans. In agriculture, the movement to phosphorous-based plans will continue.

Work with more active and a growing number of groups that deal

with water quality, water protection, and water supply and watershed management planning issues are anticipated. The Upper James River Roundtable will be strengthened and will find better ways to find funding and play a meaningful leadership role for the area. Increase enforcement and compliance of local programs involved in erosion and sediment control by increasing staffing levels in this office.

Middle James River Watershed

The Piedmont James River Roundtable continued to focus on promoting the James River Tributary Strategy. Over the past four years, the Roundtable has sponsored local government informational sessions to ensure understanding of water quality issues and policies that may affect local governments.

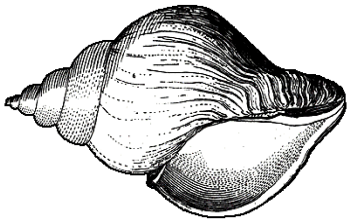
Local government sessions completed to date include: Albemarle, Amelia, Amherst, Bedford, Buckingham, Cumberland, Fluvanna, Goochland, Powhatan, and Prince Edward counties; City of Charlottesville; Region 2000 and Thomas Jefferson Planning District Commissions. The Thomas Jefferson SWCD, in partnership with the Roundtable and local government support, hosted a successful stormwater management and low impact development workshop. A second workshop with the same theme is being planned for the Richmond metropolitan area in 2005.

The expansion of a local fertilizer label initiative continued with the securing of funds to contact and work with local and regional fertilizer suppliers. Other activities conducted by the Roundtable include website redevelopment, a regional public relations campaign and urban best management practices and stream restoration workshop development.

Lower James River Watershed

The Lower James River Roundtable, hosted by the Hampton Roads Planning District Commission, has undertaken the planning process for the Lower James portion of the James River Tributary Strategy revision process and is working to facilitate the implementation of the Lower James portion of the James River Tributary Strategy.

Currently the Roundtable is providing input on the effectiveness of street sweeping as a BMP for sediment removal in Hampton Roads and a bacteria-sampling protocol for use in TMDL implementation plans. The Roundtable is actively linked to the Elizabeth River, Lynnhaven River and other grassroots efforts.



Southern Rivers Watersheds

Eastern Shore (Chesapeake Bay and Atlantic Coastal)

Building successful capacity building, monitoring and planning, the Eastern Shore Watersheds Network is dedicated to furthering environmental education and awareness and research in sustainable watershed restoration. The Network, a diverse group of Eastern Shore stakeholders, has made great strides in coordinating and implementing the multitude of natural resource planning efforts on the shore since their formation in 2000.

Currently, the Network, in partnership with VIMS, is working on a water quality-monitoring program to assess sediment discharge in two bayside creeks and a household hazardous waste disposal program. The Network continues to work closely with VIMS, DEQ CZM, DCR, TNC and local stakeholders in building a seaside strategic conservation plan.

Albemarle Sound Watersheds

The Southern Watershed Area Management Program, hosted by the Hampton Roads Planning District Commission (HRPDC), continues to work with the Albemarle-Pamlico National Estuary Program in an effort to exchange planning, environmental management, watershed information with the neighboring North Carolina counties. Through recent grant funding from APNEP and the Virginia Coastal program, an effort is under way to update GIS mapping of the Southern Watershed Area in Chesapeake and Virginia Beach and extend the mapping to include Camden and Currituck Counties.

This effort will involve collecting the most current GIS information available for the Southern Watershed Area and consolidating the information so that each of the participating localities has access to the four-locality data set for use in future planning efforts.

Chowan River Watersheds

The Chowan River Roundtable is continuing its work on capacity building within both the Virginia and North Carolina portions of the Chowan River Watershed. The Roundtable's work is focused on being bi-state project oriented and consistent with the goals and objectives of Virginia's agreement with North Carolina as a partner in the Albemarle-Pamlico National Estuary Program.

Recently the Chowan River Roundtable, in coordination with J.R. Horsley SWCD and the Blackwater/ Nottoway River Keepers Association has been working with DEQ and DCR on the development of TMDLs in the Chowan watershed.

Roanoke River Watershed

During 2004, the Upper Roanoke River Roundtable (URRR) has been working actively to establish name recognition and create partnerships. The URRR now has representatives on the Virginia Roanoke River Basin Advisory Commission, the Smith Mountain Lake Association, the Smith Mountain Lake Chamber of Commerce, the South West Virginia Environmental Roundtable and the Radford University Business Assistance Program. The URRR is also involved in joint efforts with the City of Roanoke, Virginia's Explore Park and Roanoke County, the Science Museum of Western Virginia, Virginia Tech, the Western Virginia Water Authority and the Roanoke River Basin Association.

The URRR outreach efforts include meetings with area governmental agencies, non-profit groups, regional citizen's groups, students and teachers and the general public. The URRR has developed a stand-alone exhibit for conferences, a membership brochure and an interactive website. They also created an email system and list serve for Board members and are working toward an online newsletter. The URRR was present and visible for various general environmental conferences including The National River Rally, Environment Virginia, the Citizens for Water Quality Summit and Roanoke's Earth Day (at Hollins University).

The Upper Roanoke River Roundtable held its annual meeting on October 16 at Explore Park. The project priorities, which are based on a recently completed strategic plan, were decided for the coming year.

The projects deemed to have the highest priority included the development of a general mailing to local households on important watershed issues. Promotion of public awareness and participation in the Roanoke TMDL plan development. In addition, priority was placed on the promotion and organization of a citizen water quality-monitoring event. This event is similar to the citizen-monitoring day that was held on October 15, 2004 near Roanoke.

New River Watershed

With the assistance of DCR, the New River Watershed Roundtable is approaching finalization of its structure. The Roundtable invited over 85 local government elected officials, industry representatives, local interest group leaders, SWCDs, sportsmen groups, etc. to a formal seating of the Executive Board for the New River Watershed Roundtable on January 26, 2005 in Wytheville.

Upper Tennessee Watershed

The Upper Tennessee River Roundtable, Inc. (UTRR), is nearing the halfway point of the three-year EPA grant received in 2003. The partnership, initiated by the Virginia Department of Conservation and Recreation, netted $800,000 for Tennessee, North Carolina, and Virginia (with nearly $500,000 going to Virginia).

The UTRR now has a full-time coordinator, a part-time education specialist, and has contracted a grazing specialist to help implement projects related to rotational grazing. The UTRR recently implemented a new fund-raising program with eight fundraising teams that focus on the eight subsections of the Five Year Plan (i.e., Mining, Litter, Endangered Species, Agriculture, Forestry, Citizen Action, Education, and Urban).

Big Sandy River Watershed

The Big Sandy River Basin Coalition, Inc. (BSRBC), includes the states of Kentucky, West Virginia, and Virginia. Their recent partnership initiative with the Ohio River Sanitation Commission (ORSANCO) is proving to be a fruitful venture. ORSANCO, because of their regulatory authority, has been able to bring partners to the table that previously had not been eager to do so. The BSRBC is considering the possibility of expanding their Board of Directors from a current level of five, to as many as 21 directors.

The primary reasons for this expansion are to diversify the Board and increase their "reach" into the community by drawing on a larger group of people that have access to more resources and contacts.

Watershed Field Coordinators

DCR's six watershed field coordinators work in the six major watersheds located in Virginia's portion of the Chesapeake Bay watershed. The watershed field coordinator's purpose is to implement Virginia's approach for engaging citizens to adopt various *Chesapeake 200*0 agreement measures. This position acts as a liaison between DCR watershed office staff and DCR workgroups, basin and small watershed groups, local governments, planning district commissions and Virginia's roundtables.

The watershed field coordinators work to promote awareness of, and involvement in, watershed stewardship and tributary strategies, by fostering partnerships among community organizations, federal, state, and local agencies, to facilitate watershed management planning and sound land use in the Chesapeake Bay region. Watershed field coordinators are specialized positions, requiring specific focus on C2K implementation throughout the bay watershed of Virginia. Within each bay watershed, the watershed field coordinator must be familiar with the various community and watershed organizations and their activities and goals.

Total Maximum Daily Load Program (TMDL)

The Virginia Department of Environmental Quality (DEQ) monitors the state's rivers, lakes and tidal waters for pollutants every year to determine if the public can use them for swimming, fishing and drinking. If pollution amounts are too high, the waters cannot support their designated uses and fail to meet Virginia water quality standards. These waters are considered "impaired."

Through a 1999 Federal Court Consent Decree order, a federal court established a schedule for TMDL development in Virginia through 2010 for waters identified as impaired since 1998. For other waters, Virginia schedules the development of TMDLs within eight to twelve years of finding the waters impaired. Since 1999, DEQ, DCR, VDH, and DMME have developed plans, with public input, to restore and maintain the water quality of the impaired waters. These plans establish a "total maximum daily load," or TMDL, for the impaired waters. The agencies have also developed TMDL implementation plans and work with partners to reduce pollution to the level required by the TMDL.

In January 2005, DEQ, in cooperation with the Department of Conservation and Recreation (DCR) and the Department of Mines, Minerals, and Energy (DMME), released a report that describes the 5-year progress of TMDL development, implementation plans and the application of best management practices in Virginia's TMDL program. The information provided in the annual report will help to identify strategies that will ensure continued success. The report is available on the DEQ web site at www.deq.virginia.gov/tmdl.

(1) TMDL Development

The Virginia TMDL program has successfully met the demands of a rigorous development schedule. The program completed 220 TMDLs from 1999 to 2004, and more than 200 have been contracted for completion by 2006. Of the 672 waters requiring a TMDL under the consent order schedule, the program has developed TMDLs for 202 waters and has secured contracts to complete TMDLs for 162 waters by 2006. Just over 300 waters remain and are scheduled for TMDL development by 2010.

For non-consent decree impaired waters, the program has completed TMDLs for 18 waters, and 40 waters are under contract for TMDL development by 2006. The program has scheduled TMDL development for the remaining 902 waters within eight to 12 years of when the water was designated impaired.

To develop a TMDL, the state considers:

- Naturally occurring concentrations of pollutants in the impaired waters.
- Pollution from fixed locations, such as a pipe or ditch (point sources).
- Pollution sources without a single point of origin, such as agricultural activities and urban areas (nonpoint sources).

(2) TMDL Guidance Manual for Implementation Plans

DCR and DEQ produced the "Guidance Manual for Total Maximum Daily Load Implementation Plans". This manual provides guidance to local governments, soil and water conservation districts, planning districts or regional commissions, community watershed groups, and state and federal agencies on developing an implementation plan (IPs) for waters where TMDLs have been completed. The purpose of this manual is to ensure that implementation plans that are prepared by interested parties meet the state requirements through Virginia's 1997 *Water Quality, Monitoring, Information and Restoration Act (WQMIRA*), as well as other federal requirements.

In addition to the requirements of WQMIRA, this guidance manual addresses the requirements of IPs based on EPA's "Guidance for Water-Quality Based Decisions: The TMDL Process", "Supplemental Guidance for the Award of Section 319 Nonpoint Source Grants to Sates and Territories," and "Guidance for Developing Watershed-Based Plans for Impaired Waters."

(3) TMDL Implementation Plans

Implementation Plans describe ways to reduce pollution levels in the stream, and includes a schedule of actions, costs and monitoring. The TMDL program has completed six implementation plans covering 18 segments and scheduled 16 implementation plans covering 42 segments for completion by 2006. Completion of the 544-consent order waters and 902-non-consent order waters will be dependent upon available funding and staff.

	# of Plans	**# of Segments**
Completed	6	18
Scheduled	16	42
	# of consent waters	# of non-consent water
Remaining	**544**	**902**

Work continued on the development of Implementation Plans for TMDLs. Additional Implementation Plans started in 2004 by DCR. These are summarized in the table below.

Watershed (# of TMDLs)	Location	Impairment
Willis River (1)	Buckingham and Cumberland Counties	Fecal coliform
Cooks Creek and Blacks Run (4)	City of Harrisonburg & Rockingham County	Fecal coliform, benthic
Big Otter (5)	Bedford and Campbell Counties	Fecal coliform
Lower Blackwater, Maggoddee and Gills Creek (3)	Franklin County	Fecal coliform
Thumb, Run, Deep Run, Carter Run, Great Run (4)	Fauquier County	Fecal coliform *E. coli*

Additional Implementation Plans to be developed in 2005 by DCR are summarized in the table below.

Watershed (# of TMDLs)	Location	Impairment
Dodd Creek and Mill Creek (2)	Floyd and Montgomery Counties	Fecal coliform
Little Creek and Beaver Creek (3)	City of Bristol, Washington County	Fecal colifom, *E.coli,* benthic

(4) TMDL Implementation Projects

The TMDL implementation program has been working in six watersheds, and five have shown improvement in water quality. It is too early in the implementation process to determine if water quality is improving in the sixth watershed. The table below gives an overview of the six watersheds and the progress made in each.

The program and its partners work to achieve water quality standards by reducing pollution through the BMPs that were established in the implementation plan. BMPs are effective and practical ways to prevent or reduce pollution from nonpoint sources to ensure water quality. They can range from repairing septic systems, stream fencing, and planting riparian buffers.

The portion of the watersheds covered by the implementation plans is about 158,663 acres or 248 square miles. In most watersheds, local soil and water conservations districts or DCR have taken the lead in overseeing the implementation of the best management practices. To determine the success of the practices on water quality, DEQ monitors the impaired streams.

Dozens of voluntary and government funded BMPs are used throughout the watersheds. Voluntary efforts have been a key to success in the North River watershed. The Middle Creek is a successful example of Virginia's proactive approach to water quality improvement.

This approach aims to clean impaired water bodies through voluntary methods in order to avoid the costly and time-consuming process of developing TMDLs and implementation plans.

In this watershed, stakeholder interest or other resource management programs that preceded TMDL completion drove water quality restoration. Further information on TMDL implementation projects led by DCR are summarized below. Included are the three pilot projects begun in 2001 and two new projects started in 2004. The sixth implementation project, Four Mile Run watershed, is a DEQ TMDL project and a summary is not included.

a) New Projects

Holman's Creek - The Holmans Creek (Shenandoah County) TMDL Implementation Plan (IP) for bacteria and benthic impairments was completed. The Lord Fairfax Soil and Water Conservation District (SWCD) was contracted by DCR to provide technical assistance to work with landowners and conduct educational activities in order to implement the agricultural and residential BMPs identified in the IP.

Catoctin Creek - An IP for the bacteria impairments for the North Fork, South Fork and mainstem of Catoctin Creek in Loudoun County was completed. The Loudoun SWCD was contracted to provide technical assistance and educational activities to implement the agricultural BMPs and the Loudoun County Health Department was contracted to administer the residential implementation efforts.

Table - Status of Implementation Projects

Watershed or Location of Implementation activities	*Pollutant source*	*Water quality Improvement*
North River/Rockingham County	Agricultural, nonpoint	Some improvement
Middle Fork Holston River/Washington County	Agricultural, nonpoint	Moderate improvement
Blackwater River/Franklin County	Agricultural, nonpoint	Some improvement
Four Mile Run/Arlington and Fairfax counties	Urban, nonpoint	Too early to determine
Middle Creek/Tazewell County	Coal mining activities	Definite improvement
Quail Run/Rockingham County	Point source	Definite improvement

b) Pilot Projects

2004 was the third year of BMP implementation for the three "pilot" TMDL implementation projects that were initiated in late 2001. These projects are based on TMDL implementation plans that were developed for bacteria impairments on 13 stream segments.

The three Pilot Projects include:

- The North River in Rockingham County,
- The Blackwater River in Franklin County, and
- The Middle Fork Holston River in Washington County.

The number of Best Management Practices (BMPs) implemented in the North River, Blackwater River, and Middle Fork Holston watersheds from 2001 through 2004 are summarized in Tables 1-3 on the next two pages. Also the progress of BMP implementation in terms of percent of goal accomplished is provided. The specific BMPs by impaired stream segment and the load reductions also achieved were provided to EPA Region III in December 2004.

(5) Areas of Concern and Recommendations for Future Actions

Case studies have shown some water quality improvement in the three years of implementation post-TMDL development. The estimated total cost to develop TMDLs through 2010 is about $10.7 million.

DEQ projects that, assuming level funding sources and accurate estimates, the agencies will be able to meet the consent order schedule and complete the development of the TMDLs required by 2010.There do exist, however, several unknown factors that could pose difficulties in meeting the TMDL schedule.

These factors include: the quantity of non-consent order waters or impairments included in the TMDL schedule, implementation plan development costs, unforeseen complexities and modeling costs for more complex TMDLs. Challenges also exist in the development of TMDLs for complex pollutants such as mercury, and in the maintenance of a growing TMDL pool with the potential for future TMDL modifications to accommodate permit needs.

A growing challenge for the program is the transition from developing TMDLs to actual water quality improvements. Because there are no new authorities for enforcing TMDLs, it has been Virginia's expectation to implement TMDLs using existing programs and funding sources. Existing resources include permits from DEQ and the DMME that limit discharges to state waters. These programs are utilized when stream impairments are attributed to a permitted facility.

For non-permitted activities, Virginia's approach has been to use incentive-based programs such as the Virginia Agricultural Cost Share Program and the State Revolving Loan Fund.

Table 1 - BMP Summary for the North River Watershed

Control Measure	Units	Estimated Units Needed [1]	Units Completed [2]	Percent Completed
Agriculture Program				
Stream Exclusion Fencing	Feet	612,480	30,093	5%
Vegetative Cover on Critical Areas	Acres	5,154	876	17%
Forested Riparian Buffer	Acres	0	10.3	n/a
Nutrient Management Practices	Acres	0	358	n/a
Grassed Waterways	Feet	0	4,785	n/a
Residential Program				
Septic System Pump Out	System	0	7	--
Septic System Repair	System	10	6	--
Sewer Connections	System	0	0	--
Septic System Installation	System	17	3	--
Alternative Waste Treatment System	System	27	3	--
Total On-Site System Installation	**System**	**54**	**12**	**22%**

1 Numbers for septic system installation and alternative waste treatment systems are projected measures to correct 6 straight pipes.
2 The units completed column indicates cost-share and voluntary practices

Table 2 - BMP Summary for the Blackwater River Watershed

Control Measure	Units	Estimated Units Needed [1]	Units Completed	Percent Completed
Agriculture Program				
Stream Exclusion Fencing	Feet	369,600	34,561	9%
Vegetative Cover on Critical Areas	Acres	0	4.7	n/a
Forested Riparian Buffer	Acres	0	5.2	n/a
Residential Program				
Septic System Pump Out	System	0	0	--
Septic System Repair	System	0	3	--
Sewer Connections	System	0	0	--
Septic System Installation	System	7	14	--
Alternative Waste Treatment System	System	8	0	--
Total On-Site System Installation	**System**	**15**	**14**	**93%**

1 Numbers for septic system installation and alternative waste treatment systems are projected measures to correct 15 straight pipes.

Table 3 - BMP Summary for the Middle Fork Holston Watershed

Control Measure	Units	Estimated Units Needed [1]	Units Completed	Percent Completed
Agriculture Program				
Stream Exclusion Fencing	Feet	205,920	74,791	36%
Vegetative Cover on Critical Areas	Acres	0	0	n/a
Forested Riparian Buffer	Acres	0	n/a	n/a
Residential Program				
Septic System Pump Out	System	0	120	--
Septic System Repair	System	67	9	--
Sewer Connections	System	8	2	--
Septic System Installation	System	67	4	--
Alternative Waste Treatment System	System	67	1	--
Total On-Site System Installation and Repairs	**System**	**209**	**16**	**8%**

1 Numbers for septic system installation, repair, connection to public sewer and alternative waste treatment systems are projected measures to correct 209 straight pipes and failing septic systems.

Virginia also offers dedicated funding for the implementation of best management practices in watersheds with approved implementation plans.

As a result of the Governor's Natural Resources Partnership Agenda, DEQ, DCR, VDACS and VDH began discussions and development of strategies to identify and replace straight pipes on impaired streams and to utilize the Agricultural Stewardship Act to correct pollution sources on impaired streams. These efforts are being coordinated with the state's Watershed Permitting and Planning Task Force.

Despite the challenges, Virginia's TMDL program has shown that properly applied and maintained best management practices result in measurable improvements in water quality.

It will be the goal of Virginia's natural resource agencies to work with the general public to take this success to the next level by successfully remediating some impaired streams within the next few years.

AGRICULTURE

Agriculture is a large and diverse industry in Virginia and accounts for approximately 24 percent of Virginia's land area. Agricultural activities continue to be the most significant source of nonpont source pollution (NPS) in the state. The 2004 Water Quality Assessment suggests that about 70% of the total NPS nitrogen load and over 60% of the total NPS phosphorous and sediment loads come from agricultural land. These pollutants can escape crop field and livestock production areas and enter surface and ground water systems.

DCR coordinates the various statewide agricultural nonpoint source pollution management programs. The programs focus on several areas: the Virginia Agricultural Cost-Share Best Management Program, the Virginia BMP Agricultural Tax Credit Program, Conservation Reserve Enhancement Program (CREP) and other related programs.

Best management practices (BMPs) installed through the above programs are designed to reduce NPS pollution, which adversely impacts state waters. Soil loss (i.e. sediment) and excess nutrients (i.e., nitrogen and phosphorus) are reduced by a variety of BMPs installed on both cropland and pastureland. Animal waste BMPs directly assist in managing and minimizing nutrient losses to surface and ground waters. All 33 practices eligible for cost-share, and 49 practices eligible for tax credits provide some amount of reduction of Agricultural NPS contaminates, and assist the local Soil and Water Conservation Districts mission of improving water quality.

This section focuses mainly on the reduction of soil loss, nitrogen, and phosphorus. However, animal waste BMPs also reduces the introduction of fecal coliform to state waters. Other BMPs are designed to reduce excess fertilizer and pesticide runoff, or create streamside buffers to intercept contaminated runoff and groundwater.

This report highlights some of the accomplishments of the local, state and federal programs, including:

- Agricultural BMP Cost-Share program,
- Conservation Reserve Enhancement Program (CREP)
- Nutrient Management
- Nutrient Management Field Specialists
- Nutrient Management Certification Program
- Nutrient Management Regulatory Revisions
- Legislative Study of Nutrient Management Planning in Virginia
- Poultry Waste Management Act
- Poultry Litter Application Cost-Share project
- Virginia Cooperative Extension Activities
- National Resources Conservation Service
- VDACS Pesticide Disposal Program
- VDACS Agricultural Stewardship Program

Agricultural BMP Cost-Share Program and Tax Credit Program

This program provides financial incentives statewide to agricultural landowners and operators for the implementation of approved Best Management Practices (BMPs), which improve water quality, on crop and pasture lands and animal feeding operations. Nutrient and sediment reductions listed below have been achieved since 1992.

These reductions correlate directly with all elements of the Cost-Share Program, including the amount of funding, participating farmers, acres under program management, and number of BMPs installed.

- 13,348,080 pounds of nitrogen,
- 2,545,571 pounds of phosphorus, and
- 2,396,808 tons of soil.

Available funding for the Virginia Agricultural BMP cost-share program has been variable in recent years. During fiscal year 2004 (July 1, 2003 through June 30, 2004) financial support of the Agricultural BMP Cost-Share Program for the fiscal year was near an all-time low, however many aspects of the program implementation continued to be impressive.

Program implementation included the following results for the Program categories:

- 728 participating farmers,
- 69,696 acres under program management,
- 1,807 installed BMPs, and
- Over $2.3 million in matching funds.

Due to the success of the program, an additional 658,945 pounds of nitrogen, 134,245 pounds of phosphorus, and 121,130 tons of soil were prevented from reaching Virginia's waters.

Conservation Reserve Enhancement Program (CREP)

The program aims to improve Virginia's water quality and wildlife habitat by offering rental payments to farmers who voluntarily restore riparian buffers, filter strips and wetlands through the installation of approved conservation practices. CREP is an enhancement to the federal Conservation Reserve Program, which was established in 1985 and has enrolled more than 36

million acres nationwide. The Virginia CREP is actually comprised of two programs.

The Chesapeake Bay CREP targets Virginia's entire bay watershed and calls for the planting of 22,000 acres of riparian buffer and filter strips as well as 3,000 acres of wetland restoration. The Southern Rivers CREP targets watersheds outside the bay drainage basin and will establish 8,500 acres of riparian buffer and filter strip plantings and 1,500 acres of wetland restoration. In addition, statewide there is a goal of having 9,000 acres in permanent CREP easements.

Statewide, these programs are expected to reduce annual nitrogen loads to waterways by more than 648,135 pounds, phosphorus by more than 98,601 pounds and sediment by more than 52,669 tons. The anticipated reductions will help Virginia meet water quality improvement goals, particularly in the Potomac-Shenandoah region, wherein the state has agreed to reduce nutrient loads by 40 percent.

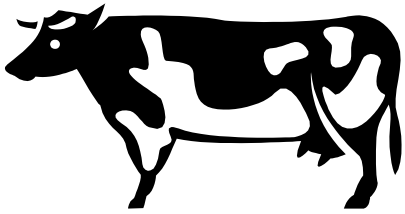
Accomplishments by the CREP program are impressive. Since the June 2000 the following accomplishments have occurred:

- 1,375 participating farmers
- 6,388 acres of buffers and wetland restored (141.95% of goal)
- 1,172 miles of stream bank protected
- 47,289 Tons of sediment reduced (89.73% of goal)
- 257,253 pounds of Nitrogen reduced (39.85% of goal)
- 48,375 pounds of Phosphorous reduced (49.06 % of goal).

Program signup, contract approval and project implementation are continuing throughout the CREP eligibility areas. Virginia's CREP enrollment period has been extended until December 30, 2007.

Concern and Recommendations for BMP Cost-Share and CREP:

Improving state budgets have led to an increase in funding for the State Ag BMP cost- share program and CREP revisions that are designed to accelerate the enrollment in CREP. Two different incentives that will provide $1.5 million in landowner incentives from state funds are being rolled out in early 2005. The first CREP easements have been recorded. However, even with increased state funding, meeting the 9,000-acre goal for permanent CREP easements will be difficult due to high legal and technical assistance costs. In the future, additional funds are needed for: technical assistance, legal expenses, program delivery expenses/costs, as well as funds to provide for landowner financial incentives.



Nutrient Management

Proper management of nutrients used in agriculture is critical to Virginia's efforts to reduce nonpoint source pollution of both surface and groundwater. DCR's Nutrient Management Program was established in 1989. The program's purpose is to encourage proper land application and efficient use of fertilizers, manures, sewage sludge and other nutrient sources utilized for agricultural and urban landscape purposes, in ways that protect and improve the quality of Virginia's ground and surface waters.

DCR works closely with large and small agricultural operations to manage agricultural nutrients. DCR also educates urban landowners about the impacts of nutrient runoff from lawns, gardens, golf courses, parking lots, and other landscaped areas. DCR uses various strategies to encourage proper land application of fertilizer, manure, and sewage sludge for agricultural and horticultural purposes.

Nutrient Management Field Specialists

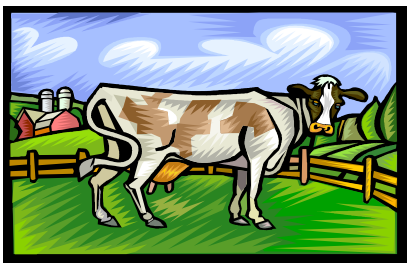
DCR's nutrient management specialists provide technical assistance to landowners. These specialists develop site-specific nutrient management plans (NMPs) with cooperating farmers, assist farmers with manure testing for nutrient levels, calibrate nutrient application equipment, and coordinate soil nitrate testing in agricultural crop fields. DCR's nutrient management specialists also assist localities in developing nutrient management programs and ordinances. The specialists developed 491 nutrient management plans covering 76,934 acres during 2004. This exceeds the projection of 60,000 acres annually as contained in the Virginia Nonpoint Source Pollution Management Program plan document.

Nutrient Management Regulatory Revisions

DCR is in the process of amending the Nutrient Management Training and Certification regulations (4 VAC 5-15 in the Virginia Administrative Code). The regulations were last promulgated in 1995. Several significant modifications are proposed to be incorporated into the regulations. The proposed regulations would require all nutrient management plans to better address phosphorus loss potential from land and better address the timing of nitrogen containing materials such as manure and biosolids.

A number of other technical changes are proposed in the promulgated NMP criteria to update soil specific crop yield expectations and crop nutrient needs based on the findings of the Virginia Agronomic Land Use Evaluation System (VALUES) update project funded through §319. Proposed regulations are expected to be released for comment by late spring of 2005, with final regulations expected to be in place by the end of calendar year 2005. DCR staff worked with a broad based technical advisory committee in crafting the regulations. Committee members represented various sectors of agriculture, the environmental community, academia, and related agencies.

The revision of the Nutrient Management Training and Certification regulations to reflect technology available to date is another strategy identified in the Virginia's 1999 Nonpoint Source Pollution Management Program plan document.



Legislative Study of Nutrient Management Planning

The Joint Legislative Audit and Review Committee (JLARC) conducted an in-depth study of the effectiveness of nutrient management plans in Virginia throughout 2004. JLARC staff interviewed farmers and agency personnel and conducted surveys of farmers and certified nutrient management planners, participated in CAFO inspections for farms requiring NMPs, and conducted a thorough review of data related to the program.

A final report entitled "Review of Nutrient Management Plans in Virginia" found that the technical content of nutrient management plans developed in Virginia is generally good. The report contains recommendations to enhance future nutrient management efforts in the Commonwealth. The document suggests alternative policy options be considered to increase the acreage under NMPs. These options range from greatly increased incentives to increased regulatory requirements pertaining to the number of farms required to implement NMPs.

Poultry Waste Management Act

The Poultry Waste Management Act (HB 1207) was passed by the General Assembly and was signed by the governor in 1999. The regulations required poultry operations with at least 11,000 turkeys or 20,000 chickens to file a registration statement for the Poultry Waste VPA General Permit by October 1, 2001.

These operations must comply with a DCR-approved Nutrient Management Plan, which includes requirements for proper storage of poultry litter. A total of 1,086 nutrient management plans have been approved by DCR for poultry operations covered in the General Permit.

This represents essentially all known operations in the state projected to need a permit. The regulated operations produce 580,117 tons of manure annually. Of this total, 187,295 tons are land applied on the regulated operations on 125,831 acres, and 392,822 tons are sold to other farmers or used for alternative uses.

Poultry companies operating in Virginia were very progressive in prompting growers to have nutrient management plans developed and approved prior to the deadline. The law and regulations also require NMPs developed after October 1, 2001 to limit the application of phosphorus to crop nutrient needs or crop removal, whichever is greater.

Pilot Poultry Litter Application Cost-Share Pilot Project

The Department of Conservation and Recreation in cooperation with the poultry industry has operated a pilot litter transport project. DCR used Water Quality Improvement Act state funds to provide $25,000, with industry matching an additional $25,000. The project is intended to develop markets for poultry litter in areas outside of Virginia's main poultry producing counties.

Litter must come from Augusta, Page, Rockingham or Shenandoah County and be applied in any other county in Virginia outside of those listed as source counties. The receiving operation must submit an application along with a nutrient management plan to be considered for the program. The application rates in the nutrient management plan must be based on the soil test recommendation for phosphorus and also cannot exceed the nitrogen recommendation. The maximum allowable acreage is 150 acres per participant.

In 2003, the cost share rate was $6 / acre and the program transported 1,328 tons to 11 producers covering 859 acres. In 2004, the cost share rate was increased to $10 per acre and the program transported 5,209

tons to 30 producers covering 3,070 acres.

At this time, it is unsure if funding for the program will continue in 2005. As a result of the pilot, USDA-NRCS in Virginia has created a similar program under EQIP that cost shares $10 per acre on litter transported from a larger group of source counties to any location in Virginia. The operation must have a nutrient management plan and soil test levels for phosphorus cannot exceed moderate levels. This program does not have a maximum acreage per producer and is funded at approximately $250,000 in 2004 and 2005.

Virginia Cooperative Extension

The Virginia Cooperative Extension conducted a variety of nonpoint source educational and outreach programs for diverse audiences within the commonwealth.

Mid Atlantic Agricultural Ammonia Forum:

The Cooperative State Research, Education, and Extension Service's (CSREES) Mid-Atlantic Regional Water Quality Workgroup coordinated and conducted two agricultural ammonia forums (Woodstock, Virginia, March 16, 2004 and Chesapeake College, Wye, Maryland, March 19, 2004) for local Extension staff, NRCS, and Soil Conservation District staff, local and state government staff, agricultural professionals, producers, industry representatives, and others involved in nutrient management and water quality. The role of ammonia in the nitrogen cycle, impacts on air and water quality, and emerging science on agricultural ammonia emissions and control and treatment strategies were discussed.

Accomplishments of the forum included: 1) raising awareness of the contribution of agricultural nitrogen, especially ammonia, to nutrient enrichment; and 2) introducing participants to common ammonia sources and steps to reduce ammonia emissions.

Water Quality P-Index Workshop:

The CSREES Mid-Atlantic Regional Water Quality Workgroup coordinated and conducted a workshop in Winchester, Virginia on June 7, 2004. Experts from VA, WV, MD, DE, and PA convened a workshop to develop P source coefficients for waste products applied to land according to P Index. Results of the workshop were provided to regional State regulatory agencies for incorporation into the P Index.

Nutrient Management Symposium:

VA Cooperative Extension Specialists from Virginia Tech conducted nutrient management training for certified planners at the American Forage and Grassland Council Conference in Roanoke, Virginia on June 14, 2004.

Nutrient Management Certification Program

DCR certifies private and public sector nutrient management planners, and conducts training sessions and examinations, as authorized in §10.1-104.2 of the Code of Virginia. As of August 2004, 278 people are certified to develop nutrient management plans in Virginia.

There are planners from fertilizer, seed, and pesticide suppliers, private consultants, employees of soil and water conservation districts, DCR, the Department of Environmental Quality, NRCS, and other categories as represented in the following table.

Table 2. Nutrient Management Certificates issued through 2004.

Categories	Number of Individuals
Fertilizer/Pesticide Industry	61
Private Consultants	42
DCR Employees	19
SWCD Employees	29
DEQ Employees	22
NRCS Employees	62
Extension Agents	9
Biosolids Industry	12
Academia	3
Misc. Individuals	19
Total Certified Persons	**278**

Non-DCR certified planners developed management plans for a total of 82,436 acres during the last annual reporting period.

National Resources Conservation Service

Most of the NRCS NPS pollution reduction efforts were concentrated in three major program areas: Farm Bill Programs, Conservation Operations and the Land Treatment Program under the PL-534 and PL-566 legislation.

(1) Farm Bill Programs:

In 2004, approximately 14.3 million dollars was appropriated for a variety of programs in Virginia.

(a) *Environmental Quality Incentive Program (EQIP)* -

The largest program, the Environmental Quality Incentive

Program (EQIP), directed approximately $9.8 million to cost share contracts with producers to address resource problems under any of five statewide waster quality degradation priorities: erosion from cropland and grazing land management, nutrient pollution from cropland and pastureland, improper animal waste management systems, and NPS from forestry operations.

Major efforts under these resource concerns included:

- Installation of 19 waste storage facilities;
- 15,000 acres of nutrient management,
- 1500 acres of proper waste utilization on agriculture land;
- 1,800 acres of tree planting
- 1440 acres of forest stand improvement,
- 1400 acres of cover crop;
- 4,500 acres of residue management;
- 515,000 feet of fencing,
- 260,000 feet of water facility pipeline,
- 1300 acres of pasture seeding and
- 7,000 prescribed grazing plans.

2004 will be the last year NRCS operates the EQIP on a statewide ranking process. Starting next year with FY 2005 funds, each of the four NRCS administrative areas will receive an allocation. This is determined by the key resource indicators such as number of animal in confinement, acres of cropland, acres of grassland, etc. in an attempt to direct more funds to resource problems.

(b) *Farm and Ranchland Protection Program (FRPP) and Grassland Reserve Program (GRP) -*

NRCS also administered several easement programs that will retain agricultural land in its current less intensive use. The Farm and Ranchland Protection Program (FRPP) was used to purchase perpetual easements on six different tracts of land around the state. Funding for this program was $1.38 million dollars. All was used for current and prior year agreements. In addition, all of the provisions of the Grassland Reserve Program (GRP) were utilized in Virginia for the first time in 2004. NRCS was able to utilize $ 542,000 in new money and prior year funds to enter into nine long- term rental agreements and five perpetual easements to preserve grasslands that were threatened with conversion to other uses.

(c) *Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP)*

NRCS provides additional technical assistance to support the CRP and CREP programs. Accomplishments are reported by the Farm Service Agency and Virginia Department of Conservation and Recreation. In addition, NRCS did install an additional 563 acres of riparian forest buffers, 64,000 feet of field borders, 42 acres of grassed waterways and 86,000 feet (over 16 miles) of stream bank protection work under various programs.

(2) Conservation Operations:

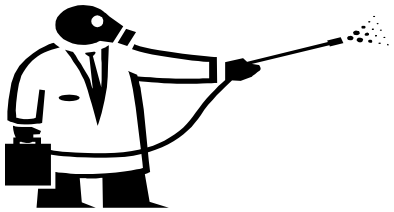
NRCS provides most of the traditional technical assistance in the form of conservation planning to producers, Soil and Water Conservation Districts and other agencies and groups through this effort. Accomplishments under this program include:

- Conservation planning of 72,000 acres of cropland
- Conservation planning of 99,000 acres of grazing lands
- Practices were applied by NRCS on 42,000 acres of cropland and over 75,000 acres of grazing lands.

In addition, Comprehensive Nutrient Management Plans (CNMP), which include complete planning involving erosion control, nutrient management planning and animal waste management, were prepared for 110 animal operations. A total of 80 were certified as completely installed.

(3) Land Treatment Program:

Working under authorization contained in both Public Law 534 (Potomac Basin) and 566 (statewide), NRCS operated a cost share assistance program in 8 watersheds across the state. These efforts are for long term contracting to improved water quality in these basin. Funding of approximately $ 117,330 was allocated to 182 active contracts in order to install planned conservation practices.



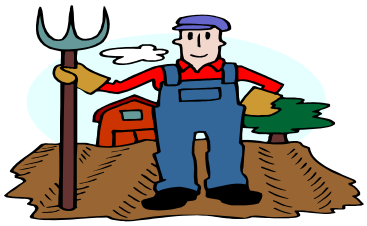
Pesticide Disposal Program

The disposal of canceled, banned or unwanted pesticides poses a significant challenge to agricultural producers and other pesticide users due to its high cost. The proper disposal of waste pesticides eliminates a potential threat to health and the environment.

The Virginia Department of Agriculture and Consumer Services (VDACS), in cooperation with the Virginia Pesticide Control Board (PCB) and Virginia Cooperative Extension (VCE) completed the 2004 Pesticide Disposal Program in early December. Two hundred and three farmers, pesticide dealers and pest control firms disposed of 210,423 pounds of unwanted, outdated and banned pesticides during this year's collection encompassing 33 localities.

Throughout the 14 years of Virginia's disposal project, 2,308 agricultural producers, pesticide dealers and pest control firms have participated in the program with 1,158,851 pounds collected and destroyed. For more information about the 2005 programs, contact Liza Fleeson at 804-371-6561. Information

about this and other VDACS pesticide programs may be found at: http://www.vdacs.state.va.us/pesticides/index.html.



Agricultural Stewardship Program

The Agricultural Stewardship Act (ASA) is the result of a joint effort by the agricultural and environmental communities, districts and agencies, to develop a common-sense solution to water pollution problems caused by agricultural operations. The Commissioner of the Virginia Department of Agriculture and Consumer Services (VADACS) is responsible for the administration and enforcement of the ASA.

The goal of the Act is to consider the needs of the farmer while meeting the requirements of the environment. The ASA addresses water pollution problems caused by nutrients, sediments and toxins entering state waters from agricultural activities. ASA also allows for a complaint and investigation procedure that forces compliance by agricultural operators when activities are determined to be causing water pollution.

Complaints that an agricultural activity is producing water pollution go to the Commissioner of the VADACS to determine if an investigation is warranted. The purpose of the investigation is to determine whether the agricultural activity is causing or will cause water pollution. If no causal link is found, the Commissioner will dismiss the complaint. If the investigation determines that the activity is the cause, the farmer is given sixty days to develop a corrective plan. ASA provides a farmer six months to start implementing his plan and up to eighteen months for full implementation. If a farmer fails to implement a plan within the 18-month time limit, the Act requires the Commissioner to take enforcement action.

During April 1, 2004 through February 28, 2005, the Commissioner received 31 official complaints regarding possible agricultural pollution. These official complaints fell into 7 different categories according to commodity:

1. Beef – 6 (19.4%);
2. Beef/Hog – 1 (3.2%);
3. Cropland – 12 (38.6%);
4. Dairy – 2 (6.5%);
5. Hog – 3 (9.7%);
6. Horse – 6 (19.4%); and
7. Horse/Cattle – 1 (3.2%).

Eleven complaints indicated that both sediments and nutrients were involved. Five complaints were attributed to pollution problems involving nutrients only, while 15 faulted only sediments as contributing to pollution problems.

The Commissioner's Office, together with local SWCD's in many cases, completed investigations for 27 of the 31 official complaints received. As of February 28, 2005, four complaints were awaiting a decision by the Commissioner. Of the 27 complaints on which the Commissioner acted before the end of the eleven-month period, Department investigations determined that 18 of the complaints revealed insufficient or no evidence of water pollution; therefore, these complaints were unfounded.

In one case, the complaint was dismissed because the complaint related to matters outside of the purview of the ASA. In eight of the investigations, there was sufficient evidence to support the allegations that the agricultural activities were causing or would cause water pollution.

The Department is responsible for conducting six-month and 18-month field reviews to make sure that plans are on schedule as far as implementation and that implemented plans are maintained to prevent the re-occurrence of pollution problems identified by the Department in its response to complaints received under the ASA.

At the recommendation of staff, the Commissioner conducted informal fact-finding conferences to determine whether two agricultural operations were maintaining their ASA stewardship plans and whether the plan for one operation was completed in compliance with the Act. The Commissioner issued corrective orders finding that two agricultural operations were out of compliance and establishing deadlines in which compliance must be achieved. A third corrective order was being prepared for issuance as of February 28, 2005.

During the program year, VDACS participated in meetings held by state soil and water conservation districts (SWCD's) at the regional and state levels and participating in meetings held by various commodity and agricultural groups.

Concerns and Recommendations

Staff reductions and resource constraints represent a serious challenge for this program during the ensuing reporting period and beyond. Information about the Ag Stewardship Program may be found at: http://www.vdacs.state.va.us/stewardship/index.html.

FORESTRY

Virginia has approximately 16 million acres of forested land (68 per cent of the state). The primary pollutant associated with forestry operation is sediment resulting from soil loss during forest disturbing activities. Based on the NPS Assessment, about 17% of the total NPS Nitrogen loads and over 30% of the total NPS Phosphorous and Sediment loads may come from forested sources.

In 1992 the Water Quality Task Force recommended that the Virginia General Assembly pass the Silvicultural Water Quality Act of 1993 (Article 12, §10.1-1181.1-7). This authorized the DOF to act to prevent pollution of state waters from silvicultural activities. The act was amended several times, the last being in 2002 to allow for the issuance of a civil penalty against the operator for failure to notify the Department of Forestry (DOF) of a commercial timber harvesting operation.

Through the Nonpoint Source Pollution Management Program (NPSPMP) and the Virginia Silvicultural Water Quality Law (SWQL), the commonwealth aims at reducing nutrient and sediment pollution entering Virginia's waters. DOF is actively involved in both water quality protection and the prevention of nonpoint source pollution from forestry practices through the SWQL and through statewide riparian forest buffer restoration work.

This report section includes information on the NPS forestry activities in 2004 as they apply to:

- The Silvicultural Water Quality Law and BMPS
- Riparian Forest Buffer Restoration

Silvicultural Water Quality Law

Since 1993, the efforts of the DOF and public/private organizations have trained over 4,500 loggers in Water Quality Techniques known as Best Management Practices or BMPs, inspected over 3,000 harvesting operations per year, and utilized the Silvicultural Water Quality Act (SWQA) to protect water quality.

Education under the American Forest and Paper Association's (AF&PA) Sustainable Forestry Initiative (SFI) program has allowed the DOF to train over 4,500 individual loggers and foresters on harvest planning and BMP's since 1996. Field personnel within each of the six administrative regions accomplish harvest inspections, averaging over 3,000 inspections per year. The purpose of these inspections is to make recommendations on the implementation of BMPs and to enforce the SWQA.

Compliance Actions

The SWQL, now in its 12th year, is recognized nationally as a model for water quality compliance. As of the end of January 2005, there have been the following law actions since program inception:

- 1606 Notices of Violations
- 708 Informal Conferences
- 466 Special Orders resulting from Informal Conferences
- 195 Final Orders
- $964,326 penalties assessed
- $250,342 penalties collected

Harvesting notification has improved statewide though there are still some issues with both notification and compliance. Penalties collected are placed in the Water Quality Penalty Fund. By law, penalties collected are to be used for education, demonstration of water quality protection techniques and research only. In addition to law compliance, a statewide audit has been in place since 1994 to track trends in BMP implementation and effectiveness. Eighteen of these audits have occurred—the goal being two per year. These audits have all used the same methodology to ensure consistency in trend data control methodology for consistency in compliance actions and training of DOF personnel.

Recent Program Accomplishments

Most recently, several important program elements were improved. The DOF completed the Fourth Edition of *Virginia's Forestry Best Management Practices for Water Quality* and the associated Field Guide. A Section 319 grant provided critical funding for this revision.

In terms of education and information, the DOF, with the forest industry and Virginia Tech, conducted multiple Logger Training Sessions in 2004 to educate forest operators to the changes that have occurred in the new BMP Manual and changes to the SWQL. The DOF developed and manned several exhibits at the East Coast Sawmill and Logging Equipment Exposition dealing with Water Quality Education on Forestry Operations that reached an estimated 15,000 forestry professionals in a two-day period. This occurs in alternate years and will occur again in 2006.

Riparian Forest Buffer Restoration

In October 1994, the Chesapeake Bay Executive Council adopted Directive 94-1, which called upon the Chesapeake Bay Program to develop a policy that would enhance riparian stewardship and efforts to conserve and restore riparian forest buffers. In 1996, The Virginia Forest Riparian Buffer Initiative was established with the goal to protect all streams and shorelines by forested or riparian buffers.

Bay Program partners agreed to develop an implementation plan for their respective Governor by June 30, 1998, including benchmarks on how these goals and recommendations would be met. The resulting plan committed Virginia to restoring 610 miles of riparian forest buffers by 2010. It reaffirmed Virginia's pledge to protect the state's water quality and to restore the health of the Chesapeake Bay.

During 2004 alone, Virginia restored 423.3 miles of buffers statewide (241.4 stream miles in the Chesapeake Bay watershed and 181.9 stream miles in the Southern Watersheds).

Virginia met its riparian buffer commitment early; as of June 30, 2004, Virginia had restored buffers along 2,407 miles of rivers and streams statewide, 1,433 within the Chesapeake Bay Watershed and 974 within the collective "Southern Rivers" watersheds.

Virginia has restored three times as many miles of riparian buffers as its original goal and has done so well ahead of the 2010 target date. In December 2003, Governor Warner committed to restoring 3,200 miles of riparian forest buffers in the Bay by 2010. Virginia has now committed to a much greater effort on the order of 30,000 miles as part of the state's Tributary Strategies.

The Conservation Reserve Enhancement Program (CREP), a federal cost-share program that provides incentives to landowners to protect their streams, remains the most successful program in the state for promoting riparian forest buffer restoration as well as a successful example of state and federal cooperation. Soil and Water District staff, NRCS staff, and Department of Forestry (DOF) field staff continue to promote CREP and to provide private landowners with the necessary technical assistance to implement CREP projects. DOF continues to provide the bulk of planting stock for CREP projects. District, NRCS, and DCR staff handle most of the program administration. Continuation, if not expansion, of CREP in the 2007 Farm Bill will be critical if Virginia is to meet its 2010 buffer restoration goals.

Several ongoing efforts seek to identify and target those stream segments most in need of buffer restoration. In addition to efforts on the part of Virginia's natural resources agencies, studies by various universities using remote sensing and geographic information systems have enabled agencies to target small watersheds where restoration is most critical to achieving Virginia's water quality goals.

Tributary Strategies

Virginia's Tributary Strategies program has driven this process in that portion of the state that falls within the Chesapeake Bay watershed in an effort to develop local watershed-based plans for specific actions aimed ultimately at restoring the health of the Chesapeake Bay ecosystem.

The conservation of existing riparian buffers will be crucial to the success of Virginia's new Riparian Buffer Initiative. Efforts to coordinate the goals and priorities of the riparian buffer initiative with state and local integrated watershed management programs have been accomplished in part through the sharing of information with all Tributary Strategy areas, Save Our Streams programs, and several local river associations, and through collaborative restoration efforts such as those in the Roanoke River Basin, Madison County, and the Potomac Watershed Partnership, and presentations at the Virginia Watershed Management Conference. The new Riparian Forest Buffer Initiative will be a major nonpoint source pollution reduction strategy for the ongoing tributary strategy process.

Tracking Efforts

Efforts are underway to improve tracking of buffer restoration projects, including an on-line tracking tool developed by the Chesapeake Bay Program and upgrades to the Department of Forestry's information management system. A buffer survival study is ongoing through a revegetation and seedling survival study at 10 sites in Virginia's portion of the Potomac watershed, and through a comparative study of riparian seedling survival between different planting methods.

Incentive Programs

A variety of incentives have been created to encourage landowners to conserve or restore riparian buffers.

- Acquire Conservation Reserve Enhancement Program (CREP) funds from the U.S. Department of Agriculture available through 2007. As of April 2003, more than 14,000 acres have been approved for enrollment in CREP.

- Implementation of legislation (H.B 1419 signed July 1998) authorizing tax incentives for riparian forest buffer lands in easements.
- Enactment of a riparian buffer tax credit (2000) for individuals or S-corporations who own land on which timber is harvested and who forbear timber harvesting on portions of land abutting waterways for 15 years.
- Local government revenue losses due to buffer land tax breaks made eligible for reimbursement from Water Quality Improvement Fund grants.
- Ongoing efforts for enabling legislation to exempt riparian forest buffers from estate taxes.
- Ongoing efforts to encourage localities to use stormwater utility fees for establishing riparian buffers.
- Ongoing effort to consolidate and improve cost-share programs. There has been significant improvement in the coordination of cost-share programs among agencies to date. Within the Farm Bill, the Forest Land Enhancement Program and Environmental Quality Incentive Program target riparian plantings.
- Ongoing effort to encourage flexibility in local subdivision and zoning requirements.
- Annual efforts to increase funding for conservation through General Assembly Appropriations to the Virginia Land Conservation Foundation.
- Recognition programs established through the Department of Conservation and Recreation watershed awards program and the Soil and Water Conservation District awards program.

As mentioned above, efforts have been made to target buffer restoration efforts where the greatest benefits can be achieved. The availability of GIS and higher resolution imagery has aided in these efforts. One application developed by DOF, ForestRim, is a web-based internet mapping program that shows riparian forest buffer plantings and assists in targeting restoration opportunities. Tracking responsibilities have been shared between DCR and DOF, with DCR reporting state cost-share and CREP numbers to DOF and DOF tallying volunteer efforts to achieve the final buffer totals. Online reporting capabilities currently in development will facilitate this process.

Future Considerations

The Virginia Riparian Working Group will continue to work closely to fulfill the goals and objectives of the Riparian Buffer Implementation Plan. The Department of Forestry will continue in its efforts to strongly encourage and support riparian planting and protection on all appropriate state-owned lands. These lands have been identified, and several sites have had buffers installed or had plans developed for implementation pending funding availability.

Technical assistance from the Department of Forestry, Soil and Water Conservation Districts, and the Natural Resources Conservation Service will continue to be provided to these state agencies to restore their sites.

Other objectives include:

- Updating Executive Order 48 (99) and the signing of a new Executive Order on stream restoration.
- Continued documentation of the location and extent of riparian easements across Virginia.
- Monitoring of Virginia's nursery stock and supply to alleviate any potential shortfalls for seedlings. This will be accomplished by working with State and private nurseries to provide information about the program and its potential long-range seedling sales.
- Research and quantification of vegetation survival and water quality effects within restored buffers.
- Continued implementation of the Conservation Reserve Enhancement Program, now extended through 2007.
- Development of implementation approaches for achieving the new Riparian Forest Buffer Directive calling for at least 10,000 new miles by 2010 and urban canopy goals in 5 pilot localities.
- Partnering with the U.S. Army Corps of Engineers on a major restoration effort in the middle Potomac watershed.
- Continued collaboration on and promotion of Virginia's Tributary Strategies.
- Continued establishment of riparian buffer demonstration sites.

Future Goals and Concerns

DOF's future concerns regarding nonpoint source pollution center on the need for additional resources to complete goals. Meeting Virginia's share of the 10,000-mile buffer goal will require significant resources. Yet, Virginia's Tributary Strategies collectively call for 30,000 miles of buffers to be restored in the Chesapeake Bay watershed portion of the state in order to meet mandated nutrient and sediment reductions, a far more ambitious goal.

Another goal of the agency is implementation of TMDL projects. Active participation on the part of the DOF will, again, require additional resources. Finally, the Department would like to contribute to completing research on regional curves for streams in Virginia and to further stream restoration work.

URBAN PROGRAM S

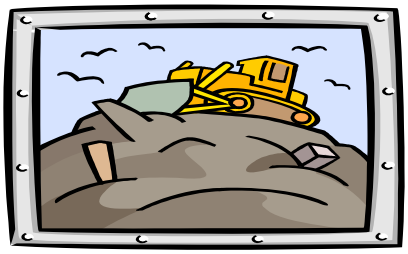
Although only seven percent of the land in Virginia is considered urban, urbanization of forest and agricultural land is occurring at a rapid rate in many parts of the Commonwealth. This urbanized growth results in NPS pollution as the result of precipitation washing nutrients, sediment, and other toxic substances from the impervious surfaces that make up these areas.

DCR is charged in the Code of Virginia to "provide technical assistance, training, research, and coordination in stormwater management technology to local governments for the protection of properties and reduction in NPS pollution." The Virginia Stormwater Management Law enables localities to adopt comprehensive stormwater management programs and requires state agencies to control stormwater on active construction projects and the post-construction finished landscape. DCR staff provide technical assistance, comprehensive watershed planning advice, and training to urbanizing localities that have adopted erosion and sediment control, subdivision, drainage, stormwater, and other land development ordinances that address stormwater management.

Further, DCR staff directly review, approve, and oversee implementation of construction and maintenance plans for Best Management Practices (BMPs) on state agency projects to ensure compliance with the Regulations.

This report section includes a summary of urban programs' NPS activities in 2004 in the following areas:

- Erosion and Sediment Control
- Stormwater Management



Erosion and Sediment Control:

DCR implements the state Erosion and Sediment Control (ESC) Program according to the Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations (VESCL&R).

The ESC Program's goal is to control soil erosion, sedimentation, and nonagricultural runoff from regulated "land-disturbing activities" to prevent degradation of property and natural resources. The regulations specify "Minimum Standards," which include criteria, techniques and policies that must be followed on all regulated activities. These statutes delineate the rights and responsibilities of governments that administer an ESC program and those of property owners who must comply

DCR's ESC Program regulates land-disturbing activities on state and federal lands, as well as on a specific group of activities undertaken by utility, interstate and intrastate pipeline and railroad companies and private construction companies. DCR establishes statewide standards and guidance, periodically reviews local programs, and provides training and educational opportunities.

Accomplishments and Initiatives:

In 2004, DCR staff reviewed 10 local government programs for consistency with the Erosion and Sediment Control Law and Regulations. Local programs consistent with the Law and Regulations enhance water quality by minimizing sediment and nutrients associated with land disturbing activities from entering the Commonwealth's waters.

DCR staff conducted a total of 31 erosion and sediment control training classes. The classes include Basic Erosion and Sediment Control in Virginia, Erosion and Sediment Control for Inspectors, and Erosion and Sediment Control for Plan Reviewers. Approximately 1,500 individuals participated in these training classes during the reporting period. Two statewide certification exams were conducted and approximately 500 people were tested. The pass rate for these tests was over 75%. In addition to the certification exams, DCR provides online recertification programs. Approximately 250 individuals were re-certified through the online programs. Training and certification of individuals in erosion and sediment control improves water quality by reducing the impact of erosion and sediment on water quality.

DCR also administers a Responsible Land Disturber training and certification program through online delivery of information, materials, and training. During the reporting period, approximately 2,100 individuals were trained and certified. Additionally, approximately 738 were re-certified through the online program. By making individuals responsible for land disturbance and offering training and information, this program improves awareness and helps ensure proper erosion and sediment control on construction sites.

Oversight of state agency land disturbing activities is another important element of the state's urban nonpoint source programs. During this reporting period, DCR staff completed approximately 180 plan reviews for state agency projects. Staff also completed approximately 350 project inspections covering over 1,200 acres. For transportation projects, the Virginia Department of Transportation (VDOT) performed approximately 1,100 inspections based on annual standards and specifications approved by DCR. DCR staff inspected approximately 40 projects in response to complaints and to ensure compliance with the approved standards and specifications.

DCR requires standards and specifications be submitted annually for linear projects such as rail, gas pipelines, and power transmission lines. DCR reviews and approves these standards and specifications. In addition, DCR may exercise direct oversight of major projects. For 2004, approximately 35 companies submitted annual standards and specifications for review and approval.

Staff also responded to over 900 requests for technical assistance from local governments, state agencies, developers, and citizens. With regard to enforcement and compliance, staff responded to approximately 200 complaints by completing site visits and working with local programs to resolve the complaints. Although reductions have not been calculated, there are direct water quality benefits resulting from actions taken to resolve complaints and ensure compliance with the Law and Regulations.

Areas Of Concern:

Staff vacancies have impacted field delivery of the program. The Commonwealth continues to evaluate options that might be available to assist in addressing the staff vacancies.

Stormwater Management:

The Virginia Stormwater Management (SWM) Program seeks to protect properties and aquatic resources from damages caused by increased volume, frequency and peak rate of stormwater runoff. Further, the program seeks to protect those resources from increased nonpoint source pollution carried by stormwater runoff.

SWM programs are implemented according to the Virginia Stormwater Management Law and Virginia Stormwater Management Regulations (VSWML&R). The law is codified at Title 10.1, Chapter 6, Article 1.1 of the Code of Virginia and the Regulations are found at Section 4VAC3-20 of the Virginia Administrative Code.

These statutes specifically set forth regulations regarding land development activities to prevent water pollution, stream channel erosion, depletion of groundwater resources, and more frequent localized flooding to protect property value and natural resources. SWM programs operated according to the law are intended to address these adverse impacts and comprehensively manage the quality and quantity of stormwater runoff on a watershed-wide basis.

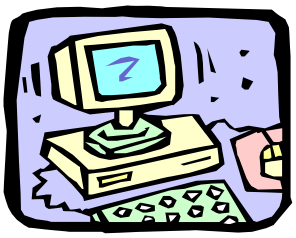
DCR's SWM Program develops technical criteria and policies to support statewide implementation of the program. DCR engineers serve as the approval authority for SWM plans for projects on state and federal lands and inspect these projects to ensure compliance. Staff engineers also help localities, whether or not they have adopted an SWM program in accordance with VSWML&R, by reviewing ordinances and programmatic guidance and providing technical assistance to ensure compliance and to promote innovative, cost-effective solutions for protecting natural resources.

The consolidation of the Commonwealth's stormwater management programs into DCR was initiated in the 2004 reporting period.

The 2004 Virginia General Assembly unanimously passed House Bill 1177 transferring regulatory authority of National Pollutant Discharge Elimination System (NPDES) programs related to municipal separate storm sewer systems (MS4) and construction activities from the State Water Control Board to the Soil and Water Conservation Board and transferred oversight of these programs from the Department of Environmental Quality to the Department of Conservation and Recreation. This transfer became effective January 29, 2005.

As a result, DCR is responsible for the issuance, denial, revocation, termination and enforcement of NPDES permits for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program. The Department of Environmental Quality continues to manage the remaining NPDES program.

The consolidation of the Virginia's stormwater management programs into DCR should streamline program implementation, increase program efficiencies and compliance, build on successful online initiatives, and improve water quality.



MONITORING and TRACKING

The overall goal of Virginia's nonpoint source pollution monitoring and tracing programs is to support the development, implementation and evaluation of the nonpoint source pollution management program. Monitoring and tracking measure the effectiveness of the management program to ensure that the beneficial uses of Virginia's waters are attained and maintained.

This report section includes a summary of monitoring and tracking activities in 2004 for the following programs and projects:

- Virginia Adopt-a-Stream Program
- Virginia Citizen Water Quality Monitoring Program
- GIS and Database Programs

Virginia Adopt-A-Stream Program

The Virginia Adopt-a-Stream Program (VAASP), is a statewide program aimed at reducing litter while advancing citizen stewardship and understanding of the commonwealth's precious waterways. Adopt-A-Stream promotes education, public outreach, citizen involvement, partnership and community capacity-building through Virginia's diverse constituencies.

The waterway cleanups supported by this anti-litter campaign provide a chance for local businesses, civic groups, watershed associations, churches, schools, environmental groups and scouts to work together or separately to do their part.

Founded in 1998, VAASP has had 8,135 volunteers from 397 groups participate in the Adopt-A-Stream program. These groups have adopted 687 miles of stream and have removed 7,007 bags of litter since 1998. Objects most commonly recovered include: plastic bottles, aluminum cans, packaged food wrappers, cigarette butts, and other common finds such as tires, furniture and appliances.

During 2004, approximately 2,334 VAASP volunteers accomplished the following activities:

- 2,334 volunteers collected 2,316 bags of litter.
- There were 105 cleanup events, enhancing over 687 shoreline miles.
- There were 4 stormdrain stenciling events, stenciling an estimated 148 stormdrains.

Virginia Citizen Water Quality Monitoring Program

The Department of Conservation and Recreation (DCR) coordinated with the Department of Environmental Quality (DEQ), Virginia Save Our Streams (VA SOS) and the Alliance for the Chesapeake Bay to sign a revised Letter of Agreement to cooperatively implement the Virginia Citizen Water Quality Monitoring Program. This foundational document brings two state agencies and two citizen-monitoring organizations together to actively promote and support citizen efforts to address local water quality issues.

In 2004, DEQ reported that 801 volunteers monitored approximately 425 sites, covering at least 1,060 stream miles. Due to the professional nature of these groups, at least 25 training events took place. Citizen-based groups, such as the Virginia Save our Streams and the Alliance for the Chesapeake Bay programs, conducted many of these training events. The training sessions resulted in the training and/or re-certifying of 506 citizen volunteers. Of these certified volunteers, 376 were trained in chemical monitoring and the remaining 120 volunteers were trained in detailed benthic macroinvertebrate procedures.

With the growth in the number of citizen monitoring groups, data from these groups is becoming even more important in helping to determine the health of Virginia's waters. The data collected in 2004 by citizen monitors identified several areas of concern. The DEQ is currently evaluating these areas to help determine potential follow up monitoring sites. The final follow up monitoring list will be completed in the spring of 2005 and will be used by DEQ to set up monitoring site locations this summer.

Virginia Save Our Streams Volunteer Monitoring Program - 2004 Summary

Virginia Save Our Streams (VA SOS) continues to conduct statewide trainings for water quality monitoring. VA SOS has been training regional trainers as never before, as these regional volunteers are likely to find local support for their program and are able to provide good support for local VASOS monitors. The number of trainers increased from three regional trainers in 2003 to six in 2004 and VA SOS has at least two more local leaders who will undergo training to

become a regional trainer in 2005.In 2004, VASOS maintained 215 monitoring sites and had 400 certified monitors. In addition, they held 15 general training sessions attended by 120 people. Approximately 18 groups participate with the VASOS monitoring program

Areas Of Concern:

Concerns are focused on not having the resources to meet the demands for training services. Because of diminished funding, VASOS had to charge for training services. In previous years, when money was not tight, VASOS held at least 40 and sometimes up to 60 training sessions a year. Last year, VASOS held 15 sessions.

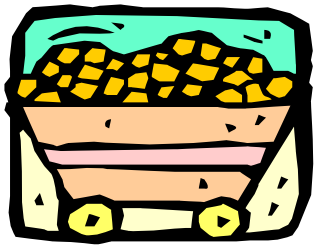
Another concern has been support from state agencies (DEQ and DCR) in helping VASOS and other volunteer monitoring organizations keep up with the priorities of the state agencies. In the past, both agencies have had at least one employee dedicated to volunteer monitoring activities and the agencies would have meetings every other month with leaders of Volunteer Monitoring Programs to share opportunities and make plans for the future. Staffing and resource limitations have reduced the availability of state assistance.

GIS and Database Programs

In 2004, GIS and technical resources of the Department of Conservation and Recreation continued to be developed and maintained to support the goals and objectives of the 1999 Nonpoint Source Pollution Management Program. Staff worked to develop and enhance the various program databases, allowing for an increase in program efficiency and better tracking of participation in department programs.

2004 activities included:

- Completed the development of the Virginia portion of the National Watershed Boundary Dataset (NWBD) along with county and city boundaries.
- Incorporated detailed imagery into NPS program activities though the delivery of 2002 Virginia Base Map Product imagery programs and equipment to all regional offices.
- Continued to provide updated and verified program information to regional and local entities.



RESOURCE EXTRACTION

The Virginia General Assembly determined that uncontrolled resource extraction activities in VA from mining of coal and non-guel minerals and the extraction of gas and oil, could contribute pollutants to water resources. The Resource Extraction section of the 1999 Nonpoint Source Pollution Management Program specified a long-term goal of "Improving surface and ground water quality in watersheds…by reducing NPS pollution associated with abandoned and orphaned resource extraction sites."

Virginia's General Assembly enacted reclamation laws in 1968 to minimize the adverse effects of mining on the environment. Legislation was enacted in 1978, which established a non-coal orphaned land reclamation program.

This section of the report contains a summary of NPS activities in 2004 from the following program areas:

- The Orphaned Lands Program
- The Orphaned Well Program
- The Abandoned Mine Land Program

Orphaned Land Program

The Department of Mines, Minerals and Energy (DMME): Division of Mineral Mining (DMM) conducts the states Orphaned Land Program. Techniques for conducting a systematic, comprehensive field inventory of nonpoint sources of pollution on abandoned mineral mines in state watersheds were developed by the DMME. Using the Inventory and Implementation Program, DMME's Orphaned Land NPS Coordinator initiated efforts to reclaim high priority abandoned mineral mine sites in selected watersheds. This initiative is carried out with the agency's Orphaned Land Program.

Orphaned lands are areas disturbed by the mining of minerals, not including coal, that were not required by law to be reclaimed or have not been reclaimed. More than 3,000 abandoned mineral mines exist throughout Virginia. Some of these sites may pose significant hazards to the environment and the health and safety of the public.

The DMM Orphaned Lands Program has three primary functions:

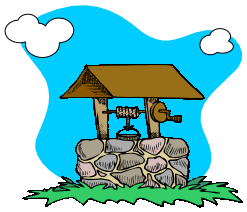
1) Inspection and survey of abandoned mineral mine sites,
2) Design of reclamation plans for abandoned mine sites, and
3) Administration of contracts, under Virginia procurement law,

to construct the reclamation designs.

Since 1981, DMM has completed the reclamation of 610 acres of disturbed land at 83 abandoned mine sites in Virginia. The total value of contracts awarded for orphaned mineral mine reclamation is $3,153,707, through fiscal year 2004. There are approximately 3,000-abandoned mineral mine sites in Virginia and DMM has completed inventories on 1,449. The sites occur in all physiographic provinces and some sites were mined prior to the Revolutionary War.

In fiscal year 2004, 394 sites were inventoried with the support of Section 319 Funds administered by the Department of Conservation and Recreation and EPA's Superfund Program. The Superfund Program supported an educational program whereby students from the University of Virginia, as part of their course work, inventoried orphaned land sites while gaining valuable field experience in assessing environmental and safety hazards.

In fiscal year 2004, five orphaned land sites and four bond forfeiture sites were reclaimed; either directly by DMM or by private and public partnerships with DMM. The total acreage reclaimed was 74 acres for orphaned and bond forfeiture sites.



Orphaned Well Program

The state's DMME also manages Virginia's Orphaned Well Program, through its Division of Gas and Oil (DGO). The Virginia Gas and Oil Act defines "Orphaned Well" as "…any well abandoned prior to July 1, 1950, or for which no records exist concerning its drilling, plugging or abandonment." The Act establishes The Orphaned Well Fund for the purpose of plugging and restoration of orphaned wells. Money for the fund comes from permit surcharges, which must accompany each application for a new permit. Orphan well sites are prioritized according to their condition and potential threat to public safety and the environment. Those that represent the greatest risk are given the highest priority for plugging and site restoration.

DGO has inventoried 120-orphaned well sites. Seven orphaned well sites and five bond forfeiture sites have been reclaimed encompassing 10 acres. In 2004, all known orphaned well sites in the Possum Hollow Creek drainage area in Lee County were plugged.

Abandoned Mine Land Program

The Division of Mined Land Reclamation (DMLR) conducts an abandoned mine land (AML) reclamation program to reclaim coal mine sties that were abandoned or left inadequately reclaimed before December 15, 1981. Funding for the reclamation comes primarily from the federal Office of Surface Mining (OSM) via reclamation fees paid by the coal industry, although DMLR is realizing success in obtaining non-federal funding for projects. Inventory data show over 58,000 acres of abandoned mine lands in Virginia with an estimated cost to reclaim at $441 million.

For 2004, DMLR reclaimed approximately 917 acres of abandoned coalmine lands. Not included in this estimate is the amount of abandoned mine land reclaimed through re-mining. Through this process, active coal operations re-mine abandoned sites and reclaim them to current standards.

DMLR does not have quantified data on abandoned land reclaimed through re-mining, but is very confident in stating that re-mining reclaims far more land, especially priority 3 problems, than the federally funded AML reclamation program.

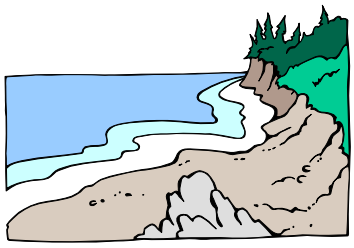
During 2004, DMLR accomplished reclamation on 38 abandoned mine land projects. These projects eliminated extreme dangers and adverse human health and safety impacts. Through this reclamation, there is also an environmental benefit.

One of the environmental highlights for 2004 was completion of the Ely Creek Acid Mine Drainage Project. Through a partnership with the Army Corps of Engineers, Lee County, LENOWISCO Planning District Commission, DMLR improved 3.5 miles of stream that had been impacted by acid mine drainage.

DMLR successfully partnered with a number of stakeholders in 2004 to increase the amount of reclamation accomplished. In addition to the partners noted above, additional partners included The Nature Conservancy, Tennessee Valley Authority, the Natural Resources Conservation Service, local soil and water conservation districts, and local watershed groups.

The major concern for abandoned coal mine land reclamation is reauthorization of fee collection to fund reclamation efforts. Fee collection was set to expire September 30, 2004, but a continuing resolution agreed to in Congress extended the fee collection to June 30, 2005.

Although the Senate and House of Representatives have taken some actions to reauthorize fee collection, passage of such of bill is not a certainty.



HYDROMODIFICATION

Issues relating to instream and riparian habitat, channel stability, aquatic resources, and watershed planning have received increased interest and are developing as focal points for environmental action. Hydrologic modification is considered the alteration of stream flow by human activities. All hydrologic modifications, whether properly or improperly implemented, may result in nonpoint source pollution.

The use of coastal nonpoint program funds has provided an opportunity to accomplish several of the activities outlined in the Hydromodification Chapter of the 1999 Nonpoint Source Pollution Management Program document. The primary purpose of the Hydromodification Chapter objectives is to improve the design standards, specifications, and implementation of best management practices for stream restoration activities. This includes establishing a work group, developing an in-field stream classification system, and establishing in-stream flows, reference reaches, and technical standards. It has become a priority to minimize the adverse effects of hydrologic modifications on water quality throughout Virginia through the use of proper design methodologies and best management practices.

Hydromodification Handbook

Developed during 2003, ***The Virginia Stream Restoration and Stabilization BMP Guide*** was completed and printed in early 2004. This manual contains information unavailable in another single document, and covers channel restoration, bank protection, bank stabilization, grade control, and flow deflection/concentration guidelines. 350 copies of the manual were printed and distributed to stream professionals throughout Virginia and to several interested parties outside of the state. For 2005, DCR plans to print more copies of the manual. The manual is also available on DCR's website: www.dcr.virgina.gov.

INSTAR

INSTAR (INteractive STream Assessment Resource) is an Arc-GIS based tool developed by the Center for Environmental Studies at Virginia Commonwealth University. It incorporates survey data on macroinvertebrates, fish, habitat and geomorphological assessments of randomly selected stream reaches throughout the coastal zone of Virginia. INSTAR allows users to obtain data collected at particular sites, make comparisons between sites or between hydrologic units, calculate reference reach equations, and assess stream health.

In 2004, VCU researchers, with cooperation and support from VA-DCR, VA-DEQ, and the Virginia Coastal Program, completed Phase I of the ongoing stream health assessment project. In this phase, a virtual reference stream model for the lower and upper Coastal Zone within the Chesapeake Bay drainage of Virginia was developed. Using a suite of biotic, ecological, and geomorphological assessment tools to facilitate stream classification, the project team established regional stream reference reaches and provided a prioritization scheme for nonpoint source pollution activities in non-tidal coastal zone watersheds.

The integration of new and existing data resulted in a database containing more than 12,000 data records from samples including fish, macroinvertebrates, habitat, water quality, and geomorphology collected from approximately 500 sites within sixty-three 14-digit hydrologic units (HUs) across the Chesapeake Bay watershed in Virginia.

Built on ESRI's ArcIMS software and supported by three dedicated servers at VCU's Center for Environmental Studies, the current version of ***INSTAR*** allows internet-capable users to interact with an extensive database of stream reaches throughout the coastal zone of Virginia. Data included are fish assemblages, macroinvertebrate assemblages, mollusk presence, water quality information, habitat assessments, and geomorphology information. These data are maintained using ESRI's ArcSDE software in a Microsoft SQL database.

During phase II of this project, which will run through December 2005, an additional 75 HUs will be sampled within the Coastal Zone, Fall Zone and Piedmont physiographic regions of the Chesapeake Bay watershed, including small to medium sized non-tidal *and* tidal tributaries (3^{rd} to 5^{th} order).

Archival data that meets ***INSTAR***'s quality control/quality assurance requirements and filters will be combined with the newly collected data and incorporated into the ***INSTAR*** application allowing completion of data acquisition and analysis for the Potomac, York and Rappahannock River drainages within Virginia.

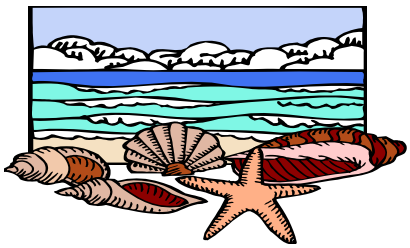
In addition, two pilot designer "versions" of ***INSTAR*** are being developed; one for use by a volunteer stream monitoring group Save Our Streams (SOS) and another for a local jurisdiction in Virginia. A local government outreach and education program is also being undertaken with VA-DCR in order to educate and train local government personnel on the existence and use of the ***INSTAR*** application. Phase II has received funding and logistical support from several federal, state, and local agencies and will incorporate and validate a large amount of existing stream data from the Virginia Department of Environmental Quality and other agencies.

GRANTS and TECHNICAL ASSISTANCE

Virginia has established a mix of regulatory and voluntary approaches that aim to control a changing blend of NPS pollution. Virginia tends to favor, and place greatest reliance on, the voluntary actions of its citizens, to minimize land-disturbing actions that contribute NPS pollution to state waters. Voluntary approaches mean that citizens become informed about NPS pollution through education, and are persuaded and/or motivated to carry out best management practices.

Some individuals are motivated by monetary incentives (tax credits, cost sharing assistance, low interest loans, etc.), others may be motivated to preserve natural resources they manage and minimize NPS pollution for the sake of the environment. The "ambassadors" of the conservation message are largely the staff of government agencies and organizations. These professional conservationists most directly interact with farmers, contractors, homeowners and others.

Professional staff is more effective at "selling" conservation, and reducing NPS pollution, when they are provided appropriate training and development opportunities. DCR established a partnership of teams that coordinate training and development initiatives. The partnership recognizes the importance of maintaining skilled staff, which are critical to achieving NPS reduction commitments in the Chesapeake Bay watershed, with TMDL implementation and obligations relating to impaired waters.



COASTAL AND CHESAPEAKE BAY PROGRAMS

The Commonwealth of Virginia has 120 miles of Atlantic Ocean coastline and approximately 2,500 square miles of estuary. In the late 1970's, declining water quality prompted the creation of the multi-state Chesapeake Bay Program (CBP). The *Chesapeake 2000 Agreement* outlines 93 commitments detailing protection and restoration goals critical to the health of the Bay watershed. Reducing nutrient and sediment loads to receiving waters through implementation of tributary strategies remains a high priority for Virginia. Tributary strategies are water quality plans that are cooperatively developed with stakeholders in each river basin.

Virginia's Coastal and Chesapeake Bay Programs includes various interagency departments, divisions and projects. These programs are highlighted in this section:

- Virginia Coastal Program
- Coastal Nonpoint Source Pollution Control Program
- Division of Chesapeake Bay Local Assistance (DCBLA)
- Chesapeake Bay Grant Program.

Virginia Coastal Program

The Coastal Zone Management Act of 1972 established a federal-state partnership program to protect the nation's coastal resources. The Virginia Coastal Program (VCP) was fully approved by the National Oceanic and Atmospheric Administration in 1986, making the Commonwealth of Virginia eligible for federal funding for coastal resource protection. On June 26, 2002 Governor Mark Warner signed *Executive Order Twenty-three,* continuing the Virginia Coastal Program through June 2006 and outlined the role of the Virginia DEQ as the lead agency for the program.

The DEQ VCP Office coordinates projects and programs with partner resource agencies, focusing on nine core areas: wetlands management, subaqueous lands management, dunes management, coastal lands management, nonpoint source water pollution control, point source water pollution control, point source air pollution control, fisheries management and shoreline sanitation.

The VCP receives funding through Section 6217 of the CZMA for nonpoint source pollution control. These funds provide full support for the Virginia Coastal Nonpoint Program, which is administered by the Virginia DCR. Funding also supports several nonpoint source pollution

related projects at the Division of Chesapeake Bay Local Assistance (DCBLA). The Coastal Nonpoint Program and CBLA projects are discussed in further detail elsewhere in this report.

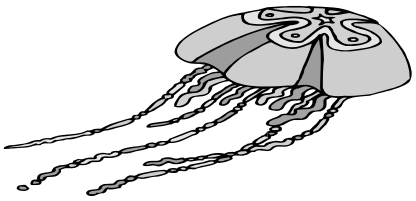
The Virginia Coastal Program is also involved in a variety of planning and enforcement projects that improve the commonwealth's ability to manage nonpoint source pollution and support several of the Nonpoint Source Pollution Management Program's goals.

Virginia's coastal zone contains all 310,813 acres of the commonwealth's tidal wetlands, and 909,097 acres (approximately 80%) of the state's nontidal wetlands. Protection of this resource is an important element of the Coastal Program. Since 1991, the Coastal Program has helped to acquire and preserve 1,802.88 acres of sensitive and significant coastal lands, including wetlands, sand dune systems, lowland and upland riparian buffers, and other wildlife habitat areas.

The Virginia Coastal Program is currently preparing an update to its 2006-2011 Coastal Needs Assessment and Strategy Coastal Needs Assessment. Once the assessment is completed, Virginia will submit a report to NOAA outlining the new assessment as well as the strategies that the Coastal Program proposes to address improvements to the coastal areas of high priority need.

Coastal Nonpoint Source (CNP) Pollution Control Program

Virginia's Coastal Nonpoint Pollution Control Program continues to support the implementation of action items contained within the Nonpoint Source Pollution Management Program document.



Development and implementation of the coastal nonpoint source pollution control program (coastal nonpoint program) is required by Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. States are required to implement 56 "management measures" within six resource categories. Virginia submitted its program document in 1995 and received conditional approval in 1998.

Subsequently, Virginia focused its efforts on meeting the program conditions and received full federal approval of the program in May 2001. Due to these efforts, many of the action items in the Coastal chapter of the *1999 Nonpoint Source Pollution Management Program* document have been completed.

Several projects were completed during this reporting period using fiscal year 2003 and a portion of 2004 Coastal Nonpoint program (CNP) funds. These projects received $580,000 in funding from the National Oceanic and Atmospheric Administration.

Project highlights include:

Shellfish Sanitation Program – Funds were provided to the Virginia Department of Health to modernize Virginia's Shellfish Sanitation program. This project translated paper files and maps into a digital format for use in a geographic information system. VDH can now conduct more extensive and efficient program analyses, more accurately update and maintain records, and make better use of mapping formats to convey information to the public.

Impacts from Onsite Disposal Systems – This project evaluated the utility of using a fluorometer in an estuarine environment to identify human waste signatures. In field and controlled laboratory settings, the equipment functioned properly and correctly identified human waste signatures. Based on the success of this project, the VDH decided to incorporate the tool into their Shellfish Sanitation program.

Integrated Pest Management – Using information developed from a previous project, this project took five little used or misunderstood practices for corn, soybean, and small grains. Cooperative Extension Service Agents demonstrated these practices at six area farmer field days. Hundreds of farmers attended the large meetings at Virginia Ag Expo and the Tidewater and Eastern Virginia Agricultural Research and Extension Centers' field days. Attendance averaged 55 farmers at the smaller county field days.

Marinas and Recreational Boating

There are approximately 1,000 marinas and 230,000 boaters in the tidal waters of Virginia that share in the scenic beauty, economic benefits and general use of Virginia's waterways. This extensive interaction between users and natural resources increases the potential for negative impacts to water quality from nonpoint sources of pollution. Marina operators can prevent and reduce these potential impacts through a series of best management practices (BMPs).

One such program is the Virginia Clean Marina Program. During this period there were many marina sites were visited. To date, there are 20

marinas that have met the minimum criteria and are designated as a "Virginia Clean Marina" and 29 additional marinas have pledged to take the necessary pollution prevention steps to achieve designation. Electronic copies of the Virginia Clean Marina Program's newsletter, *Smart Harbors,* is available at http://www.vims.edu/adv/vamarina/clean.html and http://www.deq.state.va.us/vacleanmarina/.

Efforts relating to clean marina programs continue at all levels. Virginia has promoted the development of clean marina programs regionally and nationally with some success. At the regional level, Virginia has continued to work with Maryland, the National Park Service in Washington, D.C., and Delaware to coordinate our respective programs.

CNP Initiatives and Water Quality Benefits

Since CNP funds are not eligible for construction activities, none of the projects result in direct reductions in sources of nonpoint pollution. However, each project contributes to specific actions that will result in reductions through programmatic changes, staff support, monitoring, and outreach activities.

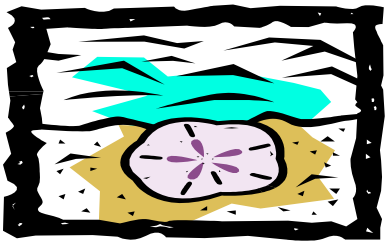
Areas of Concern for CNP Program

The CNP remains woefully under funded, in fact the CNP has sustained significant funding cuts in FY04 and may have all federal funding cut for FY05. There also seems to be a lack of commitment by the federal agencies to promote CNP implementation. EPA and NOAA need to prepare a strategy for conveying the importance of this program to upper management and the U.S. Congress.

Staff in Virginia believe that an appropriate step to implement many of the management measures is to engage local government and provide funds for projects. Concurrently, there is a need to identify state agency program areas where funds can be applied to fill a program gap or enhance program effectiveness. However, to accomplish these objectives, federal funding must

Future Actions for CNP Program

With limited and declining funding levels, the focus of the program over the ensuing year will necessarily be on continuing existing initiatives and managing recently initiated projects. In particular, work will continue related to enhancing hydromodification and stream health outreach and development. As well as on-going Clean Marina support will continue.



Division of Chesapeake Bay Local Assistance (DCBLA)

The Chesapeake Bay Preservation Act was passed in 1988 because nonpoint source pollution related to the use and development of land was a growing concern in Virginia. The Chesapeake Bay Local Assistance Board and the Chesapeake Bay Local Assistance Department (CBLAD) were created by the act and given authority and direction to develop water quality protection regulations for tidewater Virginia communities. The regulations provide criteria for designating sensitive lands and additional criteria for use by the localities in granting, denying or modifying requests to use and develop land within those designated "Chesapeake Bay Preservation Areas."

In 2004, the CBLAD was merged with other departments/divisions and became a division of the Department of Conservation. Now called the Division of Chesapeake Bay Local Assistance (DCBLA), it is Integral to their mission to increase the participation in the Multi-jurisdictional Chesapeake Bay Program and implementation of the Commonwealth of Virginia's Chesapeake Bay Preservation Act and the associated Regulations.

In addition to the ongoing functions of providing technical assistance and oversight, the board and division took several important steps to advance the goals of the Bay Act during the period from July 1, 2002 to June 30, 2004. Local program revisions to address the amended Bay Act regulations were developed and reviewed, and the first local program reviews for local compliance review were undertaken.

During this same period, the program also encountered a number of significant challenges including budget cuts and a merging of the agency in to the Department of Conservation and Recreation, with reductions in staffing at the new Division of Chesapeake Bay Local Assistance. By June 30, 2004, the Chesapeake Bay Local Assistance Board had reviewed 61 of the 84 local Bay Act programs for compliance with the revised Regulations.

Compliance Review Procedures

The Chesapeake Bay Local Assistance Board adopted a set of policies and procedures for conducting compliance evaluations of local programs in September 2002. Staff of the division has used the adopted policies and procedures to evaluate implementation of the Bay Act and regulations in 14 of the 84 local programs. This initiative includes a set of checklists to be completed by both the local government program contacts and the department staff, and a series of field investigation reports that will be used to evaluate actual construction sites

for consistency with the act and regulations.

The results of the field investigations have been combined with an analysis of the local program's constituent components (plan review processes, local ordinances and policies, and local program administration) to form an opinion of the program's consistency with the act and regulations. Based on these findings, the division prepares a staff report to the board outlining strengths and weaknesses of the local program, with recommendations for improvement and a timetable for implementation of the recommended programmatic changes.

Technical Assistance and Outreach

DCBLA continues to maintain an active role in education and outreach to help promote understanding and implementation of the Chesapeake Bay Preservation Act. During this reporting period, DCBLA staff provided information to localities through presentations at regional and local meetings, field investigations, and regular guidance.

During April 19-23, 2004, the DCBLA held its 3rd Annual Workshop for local government staff: **Perennial Stream Identification Workshop** The first day was classroom instruction and the following days were field training within the different localities. A video of the workshop was produced and is available for distribution to local governments for their use in training staff.

The Division set up its display booth at both the VDOT's Public Service Day and the Science Museum's "Surf and Turf" event, distributing brochures and pamphlets.

The Division continues to make informational material available to the public through our agency website, such as the "***Got Buffer?"*** brochure, guidance letters and the "***Riparian Buffers Modification and Mitigation Manual".*** Additional materials that are planned for the website are the Shorelands Planning project and a Septic Pump-out informational page.

DCBLA staff continued participation with other state agency staff on the Virginia Chesapeake Bay Interagency Workgroup, Nonpoint Source Advisory Committee, the Watershed Planning and Permitting Coordination Task Force, the VDOT interagency project review committee, and the Coastal Policy Team, the LID task force and workgroup coordinated by DEQ and the Corps of Engineers, respectively. Activities during this period included assistance with developing LID technical assistance in Virginia, helping to fit LID into the regulatory framework, developing an LID model ordinance and participating in workshops throughout the Commonwealth.

Polecat Creek Monitoring Project -

Researchers completed the 10th and last year of water quality monitoring for the Polecat Creek project. Funding for the project has been eliminated from DCBLA's budget. Faculty and graduate students of Virginia Tech calibrated monitoring equipment and gathered water chemistry samples from the monitored streams and rain gages, while faculty and staff of Virginia Commonwealth University continued to gather biological samples from the streams. Hydrologic data were prepared and sent to DEQ for refinements of rating curves. Quarterly reports were prepared and submitted to DCR/EPA. DCR senior management is investigating other sources of funding to determine if the project can be continued.

During the next fiscal year, the analytical results will be integrated with those of the previous years and a final project report will be developed. As well, the physical monitoring stations will be dismantled and the monitoring sites restored to their natural conditions. These activities will conclude the project.

State Response to the Chesapeake Bay Program

Staff has continued to be involved in the various activities of the interstate Chesapeake Bay Program. This involvement includes participation in the monthly meetings of the Land Growth and Stewardship Subcommittee (LGSS), the Development, Redevelopment and Revitalization Workgroup and the Watershed Assistance Workgroup (WAWG) and the Forestry Workgroup, the Nutrients Subcommittee, and the Urban Stormwater Workgroup.

As members of the WAWG, DCBLA is playing a key role in the planning and development of a workshop that addresses the integration of land use planning and watershed management planning in Virginia. DCBLA staff have also represented Virginia on several Bay Program grant review committees.

DCBLA staff has also played a vital role in the Tributary Strategy process. Each staff liaison attends the tributary strategy meetings within their region and serves as Co-leaders with other DCR staff. Other DCBLA staff members serve on the Tributary Steering Committee and provide input on nonpoint source issues and local government practices, in particular.

Better Land Use Planning

"Better Land Use Planning in Coastal Virginia", an exploratory paper and separate brochure, was developed in 2004. This document provides a brief introduction to the development pressures facing coastal Virginia and background on some of the coast's most critical natural resources. The bulk of the document is dedicated to exploring how regional, neighborhood, and site planning can help reduce the impacts of coastal development. Case studies are provided to demonstrate how many of these innovative land use-planning ideas are already being implemented by coastal Virginia communities. The document concludes with general recommendations for implementing better coastal development through amendments to local land use planning documents including comprehensive plans and zoning and subdivision ordinances. Both the brochure and exploratory paper are available to the general public as an Adobe Acrobat document at http://www.cblad.virginia.gov/program.cfm

Chesapeake Bay Grant Program

This year, DCR awarded approximately $500,000 to local governments, non-profit organizations and conservation districts, for low impact development and innovative urban BMP projects that result in long term or permanent reductions in nonpoint source pollution. All funded projects were required to support at least one specific objective within the Chesapeake 2000 Bay Agreement commitments under Development, Redevelopment and Revitalization (Section 4.2).

DCR's interest was to fund projects that exceeded the minimum expectations required by law such as changes to plans for a new development to incorporate LID practices or the establishment of structures, features, or programs on existing developed lands that result in increased NPS pollution reductions. Through a competitive request for proposals process, a total of eighteen projects were selected and offered funding awards.

Five Government By Example retrofit projects to incorporate LID into the existing sites were funded including the Northern Neck Planning District Commission office complex, City of Falls Church locations at City Hall and the City Property Yard, Fairfax County Providence Board of Supervisor's Office, Rappahannock County Elementary School, and Gloucester County's Public Library and Main Post Office in the Old Fox Mill Shopping Center.

Four demonstration green roof projects ranging from 2,500 to 10,000 square feet were funded including the James Madison University Edith J. Carier Arboretum Environmental Education Center, the City of Alexandria's Health Department building, Albemarle County office building in Charlottesville, and a commercial site in the Richmond metropolitan area being coordinated by the Alliance for the Chesapeake Bay.

Six projects were funded that influence the incorporation LID practices into new or redevelopment sites. These sites include the 15.6-acre St. Louis Catholic Church and School, a 240-acre new subdivision in Greene County, the 2-acre City of Richmond Intermediate Terminal redevelopment, a 13-acre Charlottesville Waldorf Foundation school site, up to four proposed or approved development sites in the Town of Orange, and a 80-acres waterfront property on Scott's Creek in cooperation with the Elizabeth River Project.

Other projects included establishing an LID monitoring project at Longwood University to evaluate infiltration and runoff characteristics within Gross Creek, and two bioretention demonstration sites in the Shenandoah Valley. Additional information on the projects funded through the DCR Chesapeake Bay Grants Program is available on the DCR grants web page, www.dcr.virginia.gov/sw/grants.

STATEWIDE PROGRAMS/ INTIATIVES

NPS Pollution Education

In cooperation with Virginia Cooperative Extension and local soil and water conservation districts, DCR conducts an active educational program on nonpoint source (NPS) pollution management. Annual mini-grant program funds area field days, field demonstrations, tours, workshops and other events that promote the implementation of best management practices that protect water quality. The purpose of these events is to demonstrate the latest technology and methods that reduce polluted runoff from farm and urban settings. Each year more than 4,000 farmers and land managers who impact more than 300,000 acres of crop, forest and urban land participate in this educational outreach effort.

Virginia Outdoor Foundation Conservation Easements

The Virginia Outdoors Foundation (VOF) recorded a record number of conservation easements in 2004. Last year the foundation protected 41,603 acres of cultural and natural resource lands through the use of conservation easements including the first VOF easements in Amelia, Charlotte, Lunenburg, Mathews, and Roanoke. VOF conservation easements now protect 288,893 acres in 87 counties across the Commonwealth.

Easements are a voluntary way to permanently protect land and are tailored to individual properties. State tax incentives have increased the benefits of gifts of easement, especially for landowners of modest means. Conservation easements guarantee that a property will be protected from development while keeping the land in private ownership.

For more information on conservation easements and other land protection options, contact the Virginia Outdoors Foundation at 804-225-2147 and at: www.virginiaoutdoorsfoundation.org

Virginia Conservation Lands Needs Assessment

The Virginia Conservation Lands Needs Assessment (VCLNA) will be a flexible, widely applicable tool for integrating and coordinating the needs and strategies of different conservation interests, using GIS to model and map land conservation priorities and actions in Virginia. The VCLNA allows the manipulation of issue-specific data sets that can be weighted and overlaid to reflect the needs and concerns of a variety of conservation partners – issues like:

- Water quality improvement
- Unfragmented natural habitats
- Natural heritage resources
- Outdoor recreation
- Prime agricultural lands
- Cultural and historic resources
- Sustainable forestry
- Drinking water protection

DCR, with funding assistance from the DEQ's Virginia Coastal Program, the Chesapeake Bay Program, the VA DOF, and the Virginia Land Conservation Foundation, has completed the first phase of this effort – preparation of a **Natural Landscape Assessment for Virginia's Coastal Zone**. The VCLNA Natural Landscape Assessment (NLA) uses GIS technology to identify and prioritize natural lands and the habitat corridors necessary to support and enhance them. Primary focus of the NLA is ecological prioritization - Which are the most important natural, unfragmented lands, based on considerations of biological and ecological value and integrity?

Products prepared for the Coastal Zone include atlases with maps interfacing the NLA with geospatial datasets showing areas of high development pressure, protected lands, and natural heritage resource sites. These atlases, as well as CDs containing VCLNA GIS data and models, have been widely distributed to coastal zone localities and Planning District Commissions as well as to land trusts and other conservation organizations and agencies statewide. In the next year, DCR will work to further expand the VCLNA-NLA.

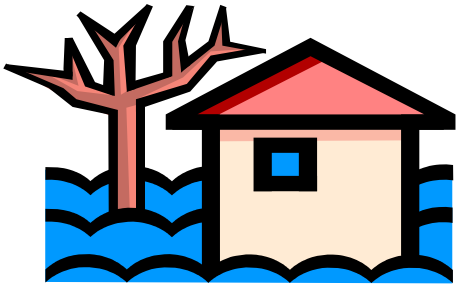
General categories of NLA Data use are:

- Targeting – to identify targets for protection activities such as conservation land purchase or easements.
- Prioritizing – to provide primary or additional justification for key conservation land purchases and other protection activities.
- Local planning – guidance for comprehensive planning and local ordinance and zoning development.
- Assessment – to review proposed projects for potential impacts to cores and other NLA features.
- Land management – to guide property owners and public and private land managers in making land management decisions that enhance ecological values.
- Public education – to inform the citizenry about the patterns and extent of habitat fragmentation.

The Natural Landscape Assessment (NLA), though a fundamental complement to other conservation interests and needs, considers only a subset of the many issues that can determine the importance of a specific property. DCR has begun assembling the additional GIS datasets that are needed to make the VCLNA a comprehensive tool for the varied needs of all of Virginia's conservation partners.

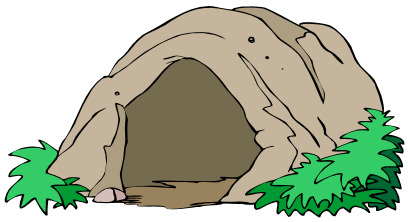
A priority will be acquisition and integration of datasets that serve to identify areas of the landscape that, through current land use and physiographic characteristics, have the greatest potential for affecting water quality. DCR will be working to apply and extend the Chesapeake Bay Program's Water Quality Protection Model as well as additional GIS models and data developed for the Resource Lands Assessment. DCR will also continue to work with Virginia Commonwealth University's Center for Environmental Studies to integrate VCLNA with their INSTAR application addressing aquatic resources.

More information on VCLNA is available at the following website: http://www.dcr.virginia.gov/dnh/vclna.htm



Ground Water Protection

The DEQ's Office of Ground Water Protection carried out the varied and successful activities supported by the Federal Clean Water Act Section 106 Ground Water Protection grant. DEQ provided funding to the Accomack-Northampton Planning District Commission to support a *Household Hazardous Waste Disposal Project*. 4,260 pounds of waste were collected and properly disposed of by Care Environmental, Inc. DEQ also supported DCR's Karst Program through a small grant for *Project Underground* activities. Additionally, funds were earmarked for five Ground Water Festivals. These festivals are a continuing tradition with DEQ and their cooperators, are very popular with teachers and students alike, and are an excellent venue to teach Virginians about ground water resource protection and nonpoint source pollution impacts. For more information on DEQ's Ground Water Protection program contact Mary Ann Massie at mamassie@deq.virginia.gov



Virginia's Karst Program

The Virginia Karst Groundwater Protection Program is funded by a Section 319 grant and managed by DCR's Division of Natural Heritage (DCR-DNH). The Karst Program works with groundwater and nonpoint source pollution problems in the 27-karst counties of Virginia. In 2004, the Karst Program continued to address the special nonpoint source pollution issues associated with the karst topography of Virginia's western counties. Dissolution over geologic time of limestone and dolostone has produced a karst landscape characterized by sinkholes, sinking streams, caves, and large springs. The interaction of surface and groundwater make such areas susceptible to water quality impairments, flooding, land surface collapse, and degradation of natural heritage resources. Land development, agricultural practices, on-site waste disposal, and highway operations all contribute to the NPS contamination of karst aquifers.

A major goal for 2004 was the further development of conservation sites for Virginia's significant caves and rare cave fauna. Karst Program staff continued to work with the Virginia Cave Board and Virginia Speleological Survey to develop GIS-based conservation sites for Virginia's Designated Significant Caves. Most of these caves are hydrologically significant, in which case conservation sites correspond to watersheds. To date, approximately 1/3 of Virginia's nearly 400 significant caves are incorporated into conservation sites.

Defined as the land areas where disturbance could impact a group of related natural heritage resources, conservation sites have no legal status. Instead, they are screening tools used to prioritize conservation efforts and to alert state environmental review staff to potential impacts. Heritage staff works cooperatively with private citizens, developers, and other agencies to avoid or mitigate these impacts, protecting both water quality and habitat. For cave conservation sites, dye trace studies are commonly required to determine the watershed of the cave.

Due to of funding reductions within both the karst program and the Cave Conservancy of the Virginias, the focus of conservation site work in 2004 was shifted from the delineation of new conservation sites to the prioritization and description of existing sites. The main results of this work were 1) the development of 381 polygons representing the locations of significant caves and other caves with significant biological resources, 2) the compilation of 200 surrogate conservation sites for project screening, 3) the prioritization of both the conservation sites and surrogate conservation sites through assignment of biodiversity rankings, and 4) the creation of six new conservation sites encompassing an additional 15 significant caves.

The total number of conservation sites is now 72, encompassing 151 caves. The other 230 caves are covered by the surrogate sites, which will be replaced with conservation sites as they are developed. Of the 361 designated significant caves and additional approximately 20 caves containing documented natural heritage resources, 151 have been incorporated into conservation sites, representing about 40% of these caves. It should be noted that the 381 caves represent less than 10% of the total number of documented caves in Virginia.

As new caves are found and known caves are more thoroughly studied, the number of significant caves and caves with natural heritage resources will grow. Estimating the percentage of karst watersheds delineated via dye tracing is more difficult. Certainly, the number is less than ten percent. Completion of the Karst Hydrology Atlas during 2005 will allow an accurate estimate to be made and will facilitate prioritization of future efforts to match areas with largest data gaps and greatest conservation need.

Another data development goal of 2004 was to research the behavior of nutrients applied on croplands near

sinkholes so that meaningful nutrient management BMPs could be developed. Karst program staff helped to form an interdisciplinary team consisting of geologists and soil scientists at Virginia Tech and from the USDA to investigate this problem, and helped develop a proposal to USDA to fund the research. Unfortunately, the proposal was not funded in 2004. Staff will continue to pursue funding sources for this project in 2005.

Another goal of 2004 was the better integration of karst-specific BMPs into the stormwater management program. Karst program staff worked with localities, including Pearisburg, Wytheville, Pulaski, and Warren County, on stormwater management issues in karst. In October, a public meeting was held in cooperation with Warren County and the Lord Fairfax Soil and Water Conservation District to present the results of a four-year study of the Cedarville Enterprise Zone, which focused on the fate of stormwater discharged into the karst aquifer.

In the karst program's longest continuing environmental response project, staff leads an interagency effort to restore water quality to Batie Springs, in Lee County. The restoration of the Batie Creek Watershed continued during 2004, as accumulations of sawdust that had generated toxic leachate were removed and applied with lime and fertilizer as a beneficial soil amendment on nearby coal mine reclamation projects. This multi-year project has been the result of the combined efforts of DCR, DMME, the US Fish and Wildlife Service, the Tennessee Valley Authority, Curtis Russell Lumber Company, and the Cave Conservancy of the Virginias. Dissolved oxygen levels, for which Batie Creek has been listed on the 303d list of impaired streams, have returned to normal from near zero values in the mid-1990s, and the Lee County Isopod (*Lirceus usdagalun)*, listed as Endangered due to its extirpation from the cave in the late 1980's, has returned, though not yet to pre-impairment population levels.

In other projects related to streams on the 303d list, karst program staff continues to work with DEQ staff and private contractors on a case-by-case basis to ensure that karst issues are considered during TMDL development. Karst program staff visited Beaver Creek Spring in Rockingham County during 2004, and will be assisting DEQ in determining the watershed for the spring.

The Karst Program continues to screen up to several hundred projects proposed for karst terrain each year for potential environmental impacts. During 2004, projects included utility corridors, residential subdivisions, industrial developments, and numerous Virginia Department of Transportation projects.

A particularly important project that began in 2004 is the compilation of the Virginia Karst Hydrology Atlas, a web-based GIS resource through which the majority of data on karst hydrology in Virginia will be available to citizens, local governments, agency staff, and consultants. Although such documents are typically published in hard copy, the digital only Virginia Karst Hydrology Atlas will be updated continuously as new findings are made and new areas are studied, dramatically increasing its value.

Education and outreach efforts during 2004 helped thousands of Virginians learn how to better protect their karst water resources. Eleven Project Underground workshops, attended by a total of 158 teachers, where held in 2004. These teachers will reach over 4,700 students with karst education information.

The Karst Education Coordinator participated in five additional events that reached a more varied audience, and continued to serve in a leadership role on the Virginia Resource Use Education Committee. Staff led a session on "Karst Education" at the eastern regional meeting of the National Association of Science Teachers, held in Richmond in December. Staff is working on the development of a new lesson on karst features and topographic maps that would teach students about karst hydrology while addressing the Virginia Standards of Learning.

Other activities of the Karst Program during 2004 included participation in the Great Valley Water Forum, which addresses both water quality and supply problems associated with the rapidly developing northern Shenandoah Valley; partnership with the USGS in the identification of springs in western Virginia for age dating; and the karst biota inventory of the Rye Cove area of Scott County, where expansion of the Kingsport, TN metropolitan area threatens to impact a karst system that hosts a wide range of globally rare fauna, including the endemic Rye Cove Cave Isopod (*Lirceus culveri).*

<u>Karst Program Recommendations</u>

Two things would greatly enhance the effectiveness of the karst program. Increased funding levels to support the delineation of new conservation sites and research on the behavior of nutrients applied on croplands near sinkholes so that meaningful nutrient management BMPs could be developed.

During 2005, the Karst Program will continue to pursue the several long-term projects outlined in this report, while responding to citizen requests and to potential impacts to karst aquifers that are identified through the environmental project review office in DCR's Natural Heritage Program.

Major goals for 2005 include the better integration of karst protection into stormwater management BMP's, the launching of the Virginia Karst Hydrology Atlas website, continued delivery of Project Underground Workshops, development of new Project Underground lessons, and an increase in the number of karst watershed and conservation site delineations through dye tracing. This last, very important item is largely dependent upon the level of funding available through our program and through conservation partners.

Floodplain Management Program

The Floodplain Management Program of DCR supports all efforts that promote sound floodplain management practices. This includes federal state and local initiatives, and specifically, the efforts of the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). For flood insurance to be available through the NFIP, the Commonwealth of Virginia and individual localities must agree to participate in sound floodplain management activities that meet the minimum standards of the NFIP and its regulations.

Local governments must adopt a NFIP compliant regulation and commit to its enforcement. There are 270 communities that currently participate in the NFIP; 16 local governments do not participate. The number of new NFIP communities has not changed since 2002.

DCR's Floodplain Management Program staff provides leadership, training and technical assistance to local governments to ensure that local floodplain programs meet or exceed the minimum standards of the NFIP. The program also supports all floodplain management initiatives within the Commonwealth, including initiatives of the U.S. Army Corps of Engineers, NRCS Emergency Watershed Protection (EWP) Program; and the following FEMA program's: Community Assistance Program (CAP), Hazard Mitigation Grant Program (HMGP), Community Rating System (CRS), Flood Mitigation Assistance Program (FMAP), and Cooperative Technical Partnerships (mapping initiative).

During 2004, the Program was able to:

- Conduct Forty-two (42) Community Assistance Visits (detailed evaluations of local floodplain programs and ordinance enforcement);
- Conduct eighteen (18) Community Assistance Contacts (evaluations of local floodplain programs and ordinance enforcement performed on the phone);
- Conduct twenty-seven (27) Planning and Technical Assistance Visits (site visits to assist community officials and/or citizens with interpretation of floodplain ordinance or NFIP regulations);
- Prepared two major program guidance plans for the next five years that were required by FEMA for program elements – one plan was for implementation of a statewide floodplain mapping initiative and the other was a strategy to enhance current operations in providing assistance to communities for compliance;
- Respond to 291 technical and planning assistance requests from community officials and citizens, consultants, and state officials;
- Conduct and participate in twenty (20) training workshops and conferences on floodplain management; and
- Review over 70 applications under the 401/404 Joint Permit Application process and VDOT's interagency coordination process.

During this period of time, there was one staff vacancy in DCR's Floodplain Management Program for about a four-month period, which had an impact on the number of technical and planning assistance contacts and visits, and the number of permit applications that program staff was able to conduct. The impact of this vacancy was compounded by the necessity for staff to respond to the flooding that resulted from Tropical Storm Gaston in the Richmond Metro Area.

FUTURE ACTIONS

The considerable number of impaired waters and the challenge of restoring the Chesapeake Bay and its tributaries represent major challenges for the Commonwealth of Virginia. In addition, issues related to funding availability and flexibility will continue to present a challenge during the ensuing year and beyond. In the long-term, meeting the water quality challenges facing the commonwealth will require new levels of funding and new thinking about how to reduce the water quality impacts of land development. For the future, Virginia has established the goal of partially or fully restoring 11 waterbodies by 2012. For the ensuing year, the focus will remain on implementation of the priority elements of the Nonpoint Source Pollution Management Program, Chesapeake Bay restorations, and the implementation of corrective actions plans in impaired streams. With unprecedented levels of state funding in 2005, the commonwealth is poised to make significant progress in meeting water quality challenges.

Virginia Department of Conservation & Recreation

State Parks • Soil & Water Conservation • Natural Heritage
Chesapeake Bay Local Assistance • Land Conservation
Outdoor Recreation Planning • Dam Safety & Floodplains